Piscataway Township Schools 2016-2019 Local District Technology Plan

Three-Year Local School District/Nonpublic School/Charter School Technology Plan

July 1, 2016 through June 30, 2019

County: Middlesex		
District/Charter School of Affiliation: Piscataway Township Schools		
District Code: 4130	Grade Levels: PK- 12	
Website: www.piscatawayschools.org		
Is the district compliant with the Children's Internet Protection Act (CIPA)? ☑ YES ☐ NO		
Please indicate below the person to contact for questions regarding this technology plan:		
Name:	Chris Irovando	
Title	Teacher Coordinator of Instructional Technology	
E-Mail	cirovando@pway.org	
Phone:	732 572-2289 x 2506	
		Date:
District Superintendent/Lead Person Approval	Teresa Rafferty	
E-Mail	rafferty@pway.org	
Phone:	732-572-2289 x2513	

2016-2019

Local District Technology Plan

District Vision: Technology will be readily available, responsibly utilized, and will serve to accelerate learning for all students.

TECHNOLOGY INVENTORY

1. Technology Equipment Needed to Improve Student Achievement

The Piscataway Township School District has a large existing base of equipment and software that is used in fulfillment of both its educational and administrative computing needs. There are over 3,000 individual components connected in a distributed wide area Ethernet system, which is used to carry educational and administrative communications between the district's fifteen physical facilities. The following chart is an overview of planned equipment improvements to the district's current inventory needed to improve student achievement over the next two years.

Planned Technology Equipment Improvements (2016-2019)

Grade Level	2016-2017	2017-2018	2018-2019
K-3	Additional Wireless Access Points installed in classrooms.		
	Additional projectors installed in classrooms.	Additional projectors installed in classrooms.	Complete projector initiative.
		Purchase cart with 30 iPads for each building.	Purchase cart with 30 iPads for each building.
4-5	Additional Wireless Access Points installed in classrooms.		
	Additional projectors installed in classrooms.	Additional projectors installed in classrooms.	Complete projector initiative.
		Deploy laptops carts.	Deploy laptops carts.
6-8	Additional Wireless Access Points installed in classrooms.		
	Additional projectors installed in classrooms.	Additional projectors installed in classrooms.	Complete projector initiative.

	Reconfigure tech labs.	Add (5 per building) MACS to tech labs.	Add additional (5 per building) MACS to tech labs.
	Replace 100 staff laptops.	Replace 100 staff laptops.	Complete project to replace staff laptops.
	Replace and obsolesce 400 iPad 3s.	Replace obsolesced iPads.	Replace obsolesced iPads.
9-12	Additional Wireless Access Points installed in classrooms.		
	Upgrade office staff computers where needed.	Upgrade office staff computers where needed.	Upgrade office staff computers where needed.
	Purchase mobile devices (Dell laptops and iPad Airs) for staff.	Purchase mobile devices for staff.	Purchase mobile devices for staff.
		Replace Security camera DVRs.	Add additional high resolution security cameras.
	Replace 18 MAC Pro computers and add 24 MAC Pro computers in New Media Suite.		
	Upgrade Storage to TB.		
	Evaluate multi camera streaming capabilities for New Media Suite.	Start to deploy multi-camera streaming capabilities for New Media Suite.	Complete multi-camera streaming initiative.
	Migrate on premise Exchange to Office 365		
	Re-evalute building's printing service capabilities.		
	Additional projectors installed in classrooms.	Additional projectors installed in classrooms.	Complete projector initiative.

District	Replace storage switches.	Increase the bandwidth of the SAN from 1Gbps to 10Gbps	
	Purchase and install Intelligent Security appliance.		
		Decrease Data Center and virtual foot print	
	Replace antiquated tape backup system with a backup appliance	Purchase and Deploy Cloud based Disaster Recovery	

1a: Technology Equipment Inventory Including Assistive Technologies

Educational Component Computer Architecture

Over 3,000 computers in the school district come under the category of Educational Component Computer Hardware. This is the majority share of equipment deployed by the district. Due to the large disparity in equipment, it is difficult to make broad generalizations that apply to all equipment types. In order to provide an overview of the district, the equipment is divided into several broad categories.

Server Technology

VMware's ESXi bare metal hypervisor running on Dell servers are integrated with a Compellent storage area network. Together these technologies provide scalable, reliable, and high availability to over forty virtual servers that support staff, teachers and students. There are an additional 16 physical servers or appliances that also support the district in varying capacities. All servers are backed-up on a daily basis using a rotational two week backup retention. In addition to these backups, the student and financial information systems are archived monthly in separate storage locations. The student transcript system is also archived daily, weekly, monthly, and an offsite archived backup occurs yearly.

The current operating system for district file and application servers run on either Microsoft Windows Server 2008 R2 or Microsoft Windows Server 2012 R2. While the operating system for all network appliances run on a flavor of Linux varying by its manufacturer and service it provides.

User accounts and password as well as computer and file-level securities are provided by Microsoft Active Directory. Group Policies and Security-groups are utilized to define access over all computing devices and files. For security purposes, users and services reside within an active directory forest and two child domains. The parent domain serves all technology personnel and infrastructure services. While one child domains serves all administrative personnel and the other serves faculty and students. All staff, teachers and students in grades two through twelve are provided with a user-account to access network resources.

Electronic mail services are provided to employees by Microsoft Exchange 2013. Two virtual servers in a database availability group as well as a load balancer in front provide redundant and highly-available mail services. Intel-Security's Email Gateway thwarts spam, malware, viruses, phishing, and all other malicious email-based attacks from user's mailboxes. For state compliance and legality purposes, all incoming and outgoing messages are archived for seven years.

File services are provided to all Staff, Faculty and students in grades 2-12. Each educational stage (Elementary, Intermediate, and Middle) has a single file server for their faculty and students. Faculty members within these three education stages are provided with individual and "public" file storage. Students in these three educational stages are also provided with individual file storage and access to each faculty members' public storage. In addition, all faculty members and their administrators are granted access to each students' file storage for assignment review.

Piscataway High School has three file servers for its faculty and students. High School faculty have a primary server for individual storage, a secondary server for interdepartmental and student file sharing. High school students have a separate file server with access to faculty and certain departmental public shares on the secondary faculty file server. In addition, all faculty members and their administrators are granted access to High School students' file storage for assignment review.

All building and central office staff share one centralized file server. Each staff member is provided with both private and public storage as well as their respective departmental/building shares. Each department and building is also provided with their own public storage accessible by all staff.

Macintosh OS X Servers

In the high school's New Media Suite, three Intel Xeon dual core 2Ghz Xserve servers are installed. Workgroup Manager is installed on these servers to deliver applications appropriate to individual users working in the New Media Suite. Xsan software is installed to bridge user files with Xsan storage units. Apple's open directory is integrated with the district's active directory, allowing New Media Suite students to log into the Macintosh computers using the same username and password district wide, as they would on any Windows desktop in the high school. A Prod-San storage unit consisting of 10 Terabytes of storage are available over the district's LAN and its own internal fiber-optic network to allow students in the New Media Suite to edit and play streaming video.

Educator Access in Instructional Areas (Teachers and library media specialists):

Educational technology is accessible to every educator in every classroom throughout the district. Every classroom in the High School and elementary schools grades K-5 is equipped with a "Teacher Workstation" loaded with Microsoft's Office Suite as well as certain district owned content specific software. In the Middle Schools every teacher is given a mobile laptop capable of wireless connectivity in every building in the district. Teachers' laptops are also equipped with Microsoft's Office Suite as well as certain district owned content specific software whenever applicable. In addition, every middle school teacher has also been issued an iPad tablet for instructional use in their classrooms and beyond. These mobile devices allow for instructional areas to be extended beyond the classroom walls. All educators have access to online educational resources available on every computer within the district. In addition to individual access, we have mobile laptop carts and various computer labs including the media centers throughout the district. These instructional areas are made available to every educator and their classes throughout the school year.

Administrative Access in Their Workplace:

In a district where communication is key, administrative computers have Microsoft Outlook installed to send and receive emails, communicate efficiently and offer instant collaboration between various departments allowing smoother operations. Every computer also has the Microsoft Office Suite installed as well as our Financial and Personnel software, otherwise known as Systems 3000. Each administrative computer has access to the World Wide Web over the district's WAN and includes access to our in-house and online Student Management software, Genesis. In addition to individual laptops and workstations for administrators, we also provide three mobile notebook carts located at the Administration building for training.

To enhance communication even further, administrators and key staff members in the district are given an iPhone to enable a constant flow of communication and to ensure that district operations continue without interference or lack of communication. In addition, as part of the EE4NJ grant, all school and central office administrators have been issued iPads in order to use an online teacher effectiveness evaluation tool to record evidence and collect data during classroom observations.

Computer Environment

High School

Multi-subject area labs are provided in order to maximize efficient use of space and for flexible scheduling. There is an open lab located in the Patton wing and two others in the Anthony wing: one in the Distance Learning Center and the other is located in the Media Center. Also, there are content area specific labs set up for the business department (3 labs), computer applications/programming (1 lab), VPPA (10 labs), English department (1 lab), and Career Center (1 lab). The computers in all of these labs are at least Pentium Dual Core computer systems and consist of Dell Optiplex 745, 755/760, 780 or 790 model computers.

Each of these PCs is commonly used to run commercial applications in a stand-alone model, with output in the form of documents and reports. Each of the labs has one or two HP LaserJet black and white networked printer and an HP LaserJet Color printer.

Because of the use of the electronic grade book and attendance program, Genesis, every instructional classroom in the HS is equipped with either a Dell Optiplex or higher Pentium IV computer with an individual HP DeskJet or LaserJet printer.

To take advantage of the building wide Wi-Fi network, to increase student access to computers and to administrate PARCC testing, 22 mobile locking carts for notebook computers have been deployed around the high school. The carts contain a minimum of 15 notebooks.

The Math department has 6 mobile notebook carts for use. These carts each contain Dell Latitude 3150 notebooks. The Science department has 5 mobile locking carts. These carts each contain 6 Gateway M155 series Tablet computers. Each computer has software to support curricular needs.

Piscataway's New Media Suite is home to the School's TV & Radio Studio. 22 Dual Core Intel Xeon 3Ghz Apple Mac Pro computers running 10.6.8 operating system are installed around the studio. Final Cut Studio 6.0, Adobe Creative Suite 3, Frames 2.0 and Microsoft Office 2004 is installed on each of these computers. In the NMS are also 6 Dell Optiplex 755 Pentium Dual Core Windows 7 computers that have Adobe Creative Suite 6, Frames 2.0 and Microsoft Office 2013 installed for student use and addition 2 Dell OptiPlex 755 for teacher use.

Middle Schools

Each middle school has one Media Center equipped with a lab of 28 computers. These stations are Dell 745 with 19in. monitors running Windows 7. Each school also has one tech lab equipped with 30 student desktops and 1 teacher station. All these stations are Gateway Profile 6 computers running Windows 7.

A 1-1 computing (iPad) initiative is implemented at all three middle schools. All students and teachers are issued iPads. The iPads are managed through a cloud based mobile management system supplied by Lightspeed. Additionally, global (in and out of district) content filtering is implemented by a Lightspeed Rocket appliance housed in the district data center.

Each classroom in the middle school is equipped with a large screen monitor or a ceiling or wall mounted projector which allows teachers to display their computer desktop for whole class or small group instruction. Additionally, mobile projector carts are available classroom use.

Intermediate Schools

All classrooms in the intermediate schools have one station configured as a teacher station for instruction and access to Genesis. These stations are Dell Optiplex 780 computer. A majority of the classrooms have a Gateway Profile 5.5 all-in-one or a Gateway Profile 6 all-in-on computer station configured as a student station.

Each of the two intermediate schools has a technology hub designed with 30 Dell Optiplex 755 Quad Core computers. Each building also has 8 wireless mobile laptop carts with printers. Each cart contains 15 Dell Latitude laptops. Each of the two intermediate schools also has 16 Dell Optiplex 780 computers in the Media Center.

Elementary Schools

An elementary school classroom can have from one to four Gateway Profile 6 all-in-on computer station for student use. Every classroom has a Windows 7 teacher station with Microsoft Outlook 2013 for accessing the district's Microsoft Exchange server e-mail

account.

Each school contains at least 1 Netbook Cart containing 12 Dell Latitude 2100 Netbooks running an Intel Atom 1.6 GHz with 2 Gigs of RAM, 10" Touch Screen Display, These netbooks are configured to connect to a wireless router and print from a printer installed on their mobile cart. These netbooks are stored nightly is a dedicated/secure area for recharging.

Each netbook is running Windows XP Professional and has the following software installed: Classworks ver. 5.8, Office 2007, Google Earth and Internet Explorer. Riverdeep Math Software, Kid Pix 4 Network, Kid Works Deluxe are also available on each netbook from a Window's 2008 server house in the High School Data room via the district's network.

Children's Corner

The technology in the two Children's Corner Pre-Kindergarten Schools consists of a mobile cart with 30 iPad 2's and 7 desktop computers for administrator and teacher use.

Overview of Deployment

School administration uses IBM compatible PCs as for business applications such as MS Word, Excel, PowerPoint, Outlook and Internet access, etc. and for all school clerical operations. These stations are typically Dell Pentium class desktops.

Dell Corporation Desktop Computers

In a move to standardize and stabilize district computing, new desktop computers purchased are from Dell Corporation. They offer certain guarantees of availability and support. Dell computers have been purchased for use throughout the district's administrative offices and academic classrooms and labs.

All Dell computers are members of the OptiPlex family with a minimum of 2GB of RAM, 80 GB hard drives, 17" or 19" color SVGA monitors with speakers built in, sound card, some with 3.5 floppy drives and are all Ethernet capable. Some of the computers are supplied CD and DVD burners.

These computers have Windows XP or Windows 7 operating system installed on them. All computers have been purchased with Dell's three (3) year next day onsite warranty.

Notebooks

The Dell Latitude D630 includes an Intel Core 2 Duo Processor, 2 Gigs of RAM, 80 Gig Hard drive, 8 cell battery, DVD/CD player, 14" WXGA display and a 120VAC power supply. The Gateway model E-295C tablet includes an Intel Core 2 Duo processor, 2 Gigs of RAM, 80 Gig Hard drive, 8 cell battery, DVD/CD player, 14" WXGA TFT display with Stylus and a 120VAC power supply and Windows 7 Operating System.

Dell Latitude 3330 and 3340 notebooks have been purchased in the K3, 4/5 and HS for PARCC testing. The Dell 3330 and 3340 notebooks are equipped with 4GBb of RAM, 8-hour Lithium Ion batteries, 14" LCD display and 120VAC power supply. These notebooks have been configured with a core of applications that include Internet Explorer, Microsoft Office Suite, Inspiration and student/teacher subject specific software. The notebooks are stored in lockable/manageable Ergotron mobile carts. These carts are designed to be stored nightly in a dedicated/secure area for recharging.

Printing Services

Overview

Printing services throughout the district are generally provided using network printers. The types of printers and deployment of equipment vary. These are grouped into two broad categories of usage.

Educational Printing

Printers are located in classrooms, labs and libraries for use by students and faculty. Color LaserJet printers are installed in every school's main office, library, and art room and computer labs. All classrooms have a networked, non-color, LaserJet printer as well as mobile laptop carts.

All teacher stations in the High School are equipped with either a personal Desk Jet or LaserJet printer.

In addition to LaserJet printers, two or more multifunction devices are available to all faculty members in every building. These multifunction devices provide high-speed printing, copying and scan to email services.

Administrative Printing

Administrative printing is handled by networked LaserJet printers and multifunction devices. All locations have two or more multifunction devices that provide high-speed printing, copying and scan to email services. Select multifunction devices also provide color printing and/or fax services.

1.a.i) Assistive Technology Devices

The district integrates assistive technology devices to accommodate student needs by working in cooperation with special services, curriculum and instruction, commission of the blind, and special education teachers who work with the students' parents or legal guardians. The IT department places a high priority on any special services requests for installation of hardware or software that is needed to accommodate a student based on his or her Individualized Education Plan (IEP) as determined by the above mentioned departments. The IT department response time is usually within 24 hours of such requests.

Devices and Software

- Earobics (K-12 speech)
- Braillewriters and computer software JAWS provided by the Commission for the Blind 12 students (including out-of-district placements)
- CD players - Books on CD
- Reading Pen (1 high school student)
- Compression Vest
- DynaMyte 3100 communication device
- Dynavox Series 4 DV4
- Dynavox Series 4 MT4
- FM system
- BigShot – Screen Magnification for the vision impaired
- iPad tablets for the visually impaired, autistic verbal and non-verbal students
- iPad tablets for students who need Proloquo2Go to communicate
- Interactive white boards
- Touchscreen desktops
- Read out Loud
- Write out Loud
- CoWriter2

1-B.) Networking Capacity

Wired: Summary

Piscataway High School currently serves as the central hub for the district's Local Area Network (LAN), Wide Area Network (WAN) and internet circuit. The district uses a gigabit fiber optic WAN managed by Sunesys to connect all school buildings, transportation, maintenance and central administration offices. All Elementary, Intermediate and Middle Schools as well as the Office buildings, connect to Piscataway High School via this fiber WAN. Each connection in every location has a managed repeater that is actively monitored by Sunesys. All WAN connections terminate at the core switch, which is responsible for the routing of all district's networks. This core switch consists of two Cisco 4500X 10-Gigabit switches and two Cisco 3650 switches. In addition to the fiber WAN, there are two Verizon T1 circuits that provide WAN connectivity to two leased properties that the district utilizes for its Community Education programs.

Every building has a Main Distribution Frame (MDF) that is connected to the districts WAN. With the exception of the High School, all MDFs are connected to one or more Intermediate Distribution Frames (IDF) via internal one-gigabit fiber. The MDF and all IDFs in the high school are connected via ten-gigabit fiber connections. All distribution frames are equipped with two or more gigabit Cisco switches that provide Ethernet connectivity to the portion of the building that frame serves. Distribution frames are also equipped with Cisco, Power-Over-Ethernet (PoE) switches to provide gigabit connectivity and power to Wireless Access Points that, that frame may serve.

Buildings have their own virtual local area network (VLAN) for both wired and wireless client devices. District classrooms and offices, typically contain two or more Ethernet connections. All computer laboratories contain fifteen or more Ethernet connections. With the exception of select, secure networks, all computers and printers connected to the districts' networks are accessible across one central communication system.

Wireless:

Several wireless networks are maintained throughout the district. Each wireless network is available based on technology and building needs. The wireless networks are comprised of Multiple VLANs and range in security protocols including 802.11x through PEAP with WPA and WEP.

Wireless coverage by buildings has been outlined below.

Administration Building

This building's wireless network is an extension of the buildings existing wired Ethernet network. Cisco Wireless Access Points (model 1142 a/g/n) are deployed in this building providing complete wireless coverage throughout. All access points in the building are centrally managed by a wireless controller.

Access Points: 12

High School

Cisco Wireless Access Points (model 2600i-K9 a/g/n) are deployed in every other classroom throughout all three buildings that makeup the high school. These access points provide complete building coverage and additional classroom coverage. The additional classroom coverage supports the Bring Your Own Device (BOYD) Network. The BYOD network is available to every High School Teacher, Student, and all other building personnel.

Access Points by Building: SBA; 71, Patton; 55, G-Wing; 19

Elementary, Intermediate, and Middle Schools

Cisco Wireless Access Points (model 1142 a/g/n) are deployed in these buildings providing complete wireless coverage across each building.

Access Points by Building: Eisenhower; 21, Grandview; 22, Knollwood; 17, Randolphville; 15, Arbor; 24, King; 24, Conackamack; 26, T. Schor; 30, Quibbletown; 25,

Children's Corner

Cisco Wireless Access Points (model 1131 b/g) are deployed in these two buildings providing wireless coverage in two designated locations. The access points in this building are standalone, with all configuration changes being made at each individual access point.

Access Points by Building: Pond; 2, River; 2

System Protocols

The Ethernet/WAN network for the district carries Ethernet protocol packets, and these in turn are used to encapsulate other data transport protocols. The various protocols are used for varied purposes, which are documented here.

TCP/IP

TCP/IP is used primarily for Internet access and communication with file servers and printers. TCP/IP is also used to perform network management and carries the SNMP management information for switches, routers and other network devices that can be managed from a central location.

TCP/IP addressing used throughout the district is a private Class A networking scheme. Network Address Translation (NAT) is used to interface the Class A addressing scheme with the public Internet.

Network Administration

Management ports on all network devices are configured with an IP address on a network segregated from production (management network). Each device is configured with a secure username and password for remote and console administration. In addition to this, devices are configured with the Simple Network Management Protocol (SNMP). SNMP configured with a private community string enables the SolarWinds Network Performance Monitor to poll each device. The individual configuration, device information, statistics, and overall health is stored and monitored. Each device is monitored 24/7 and configured to trigger email alerts based upon performance variables. Other management tools such as Telnet, SSH, Remote Desktop and Dame-Ware are also actively used to administer network devices.

Two wireless controllers provide complete, central management to all wireless networks and the access points that support them. The centralized management simplifies configuration changes and future upgrades as well as ensuring all access points are deployed with reliable configuration. These controllers also provide some visibility into the performance of each network and their individual access points. The wireless controllers currently manage 361 access points across the district.

Internet Capability

All district buildings connect to the Internet via a dedicated dark-fiber circuit from the Internet Service Provider, Light Path. The current bandwidth of this circuit is 1 Gbps.

Voice over the Data network

The Data network also supports Voice-over-IP [VoIP] communications for the Avaya phone systems in the K-12 buildings. A Virtual Local Area Network [VLAN] was created on the Cisco switches to carry all voice traffic. It is logically separated from the Data networks, and prioritized over any Data traffic. This design takes advantage of the available bandwidth provided by the Gigabit fiber WAN.

Outbound calls originating at the K-8 buildings utilize IP Trunking over the WAN to connect to the PSN through the High School phone switch.

1-C) Internet Filtering Method:

All Middle School Teachers, Students and Apple iPads utilize the Rocket content filter by Light Speed Systems.

All other students, teachers, office staff and devices utilize the McAfee Web Gateway appliance by Intel Security.

Both of these content filters utilize the above mentioned dark-fiber *circuit from the ISP, Light Path.*

1-D) Software Used for Curricular Support and Curricular Software**

The district uses a variety of commercial software products in all K-12 schools that support both the Common Core State Standards, and the New Jersey Core Curriculum Content Standards. These products range from instructional software applications to productivity tools such as Microsoft Office Suite programs (Word, Excel, PowerPoint), and/or iTools such as Pages, Numbers, and Keynote. Online textbooks and other web-based resources such as Digits, GoMath, Vocabulary.com, Edutyping, Pixton, Discovery Education, RazKids, Fitness Gram, and various other content specific software support and enhance student academic achievement. Students in grades 4-12 utilize My Big Campus and Schoology as online learning management systems (LMS). The media centers use Destiny, which tracks circulation, inventory, and provides an electronic card catalog, as well as access to eBook content. The library software, provided by Follett, runs on a server supplied by Follett Destiny is the library management service for all schools in the district and accessed via any web browser.

Students and teachers will also utilize both web-based programs and applications, as well as installed programs and applications, to create educational resources to introduce and support reinforcement of content which aligns to Common Core Standards. These programs and applications include, but are not limited to, coding software, eBook authoring tools, multimedia recording and editing software, and screen-capturing software.

The district will continue to evaluate commercial software using district criteria. The District Director of Curriculum will form committees for input and evaluation of applications, instructional software, online resources and integration of the Internet and distance learning to determine whether those resources support standards and promote student achievement while fostering collaboration, problem solving and creativity to provide the skills needed to continue to meet the challenges of a 25th century global society.

Content Filtering

All Middle School Teachers, Students and Apple iPads utilize the Rocket content filter by Light Speed Systems.

All other students, teachers, office staff and devices utilize the McAfee Web Gateway appliance by Intel Security.

Other Software Services

Student Management Database

The student management database runs on two HP ProLiant Windows 2008 servers, one which implements the Genesis web application and the other runs the Oracle database. Connections to distributed district sites are via TCP/IP and available to the World Wide Web via username and password over SSL connections.

Genesis is the commercial software product used for our student database. The database provides a student profile that includes attendance, scheduling, grades/report cards, and registration. This database is also used for state reports for all students, K-12.

District Website

The district website, powered by SharpSchool is accessible to all stakeholders to support the Accessibility Design, U.S. Section 508, Americans with Disabilities Act, Website Accessibility, ADA Compliance, Federal Accessibility Standards, US Section 508, Section 508, and Web Site Accessibility. The district and school websites provide a platform for student, teacher, parent communication through the use of social media tools such as blogs, forums, surveys, etc.

1-E) Technology Maintenance and Support

Maintenance

Technology hardware/software is maintained and repaired by the district's Information Technology (IT) department and tracked via Magic help Desk (ticket system) and Dell KACE (Middle School student iPads). The IT department schedules maintenance and upgrades. Technology is maintained and repaired unless it has been judged obsolete or a scheduled initiative will be replacing it within 3-6 months. Software upgrades are made on a necessity basis. Both hardware/software maintenance and repairs will become timelier as the IT staff increases.

Maintenance Contracts (all contracts are renewed yearly unless noted)

- Library/Media Software Maintenance – Destiny Library Services
- Transportation Software Maintenance – Versatran
- Wide Area Network Software/Hardware - Cisco Systems
- Administrative (Personnel, Financial) Software – Systems 3000, Inc.
- Administrative Server Hardware - Dell
- Administrative software – various vendors
- Printers – Stewart Business Systems
- Phone system – Avaya, SPS
- Student Management System Software – Genesis
- Performance Plus (data analysis and curriculum mapping)
- Virus software for PCs and servers, Email Spam filter - Intel Security
- Mobile Management System – LightSpeed

Technical Support

Technical support is provided by the contracted services listed above, the IT Director, IT Service Manager, IT Systems Administrator, IT technicians (6), Network Communications Specialist and building technology coordinators. Technical work is subcontracted to vendors for large projects or initiatives and managed by the district's IT Director and IT Service Manager.

Obsolescence plan

The district obsolescence plan covers a span of 6-8 years. Whenever possible this plan includes the re-allocation of equipment and use of some equipment as replacement parts.

Obsolescence Plan (2013-2016)

2016-2017
Obsolesce 50 Apple iPads

2017-2018

1-G) Other Services

Acceptable Use Policy

To support its commitment to providing avenues of access to the universe of information available, the district's system of electronic communication shall include access to the Internet for students and staff.

District Technology and Internet Safety Policy

The district technology policy states that while the board cannot guarantee the accuracy of information or the appropriateness of materials that a user may encounter, the board shall ensure the acquisition and installation of blocking/filtering software to deny access to certain areas of the Internet as a protective measure against accessing inappropriate content including but not limited to that which is obscene in nature or in any way harmful to minors. The district retains the right to monitor all access to and use of the Internet. The superintendent or designee shall coordinate the district system by ensuring that teachers receive proper training in the use of the system; ensuring that students are adequately supervised when using the system; maintaining executed user agreements; and interpreting this acceptable use policy. Student use of the Internet shall be supervised by qualified staff, unless parental permission for independent access is provided in writing.

Beginning in Kindergarten, students are formally educated about online safety in their digital literacy classes, and in sixth through eighth grade in their media-tech class. The technology acceptable use policy agreement is reviewed with students and renewed each year through parent/guardian signature. Students also sign an agreement which clearly addresses acceptable and unacceptable online behavior.

2. Needs Assessment

Staff's Current Practice, Summary Teacher & Library Media Proficiency

Technology integration is accessible to all staff and students at all grade levels on a daily basis to support the use of 21st century skills in their learning environment. At the elementary level (K-3), all classrooms are equipped with a teacher station, TV or mounted-projector. All classes at this level have access to shared mobile laptop carts for student use. The media centers have either a mini-lab of twelve computers or a mobile lab equipped with 12 to 24 laptops. These environments enable small group instruction, space for research, and staff access.

At the intermediate level (grades 4-5), all classrooms have a teacher computer and one or two student computers. The technology lab is available during resource periods at which time teachers can bring students for group instruction, projects, or co-teaching opportunities. The media center has a bank of sixteen computers, which can be used for small group instruction, space for research, and staff access. Each of these buildings also has a bank of twenty-two laptops on mobile carts, allowing for flexibility of use throughout the classrooms.

All middle school teachers have laptops. All teachers and students have been issued iPads as part of the district 1:1 computing initiative. The middle schools (grades 6-8) each have a technology resource lab equipped with 28 student stations and a teacher station available for general classroom use. Teachers utilize the technology lab for whole class instruction, co-teaching, and group instruction/projects on a daily basis. The media center has a bank of thirty computers that are used for instruction, research, and staff access.

At the high school, every classroom is equipped with a teacher computer. Multiple labs are available during the day for use, along with the media center. The media center has a bank of twenty-four computers and an additional resource lab with thirty computers. Both can be used for instruction, research, and staff access. The high school also has twenty-five mobile carts containing twelve to twenty laptops, .These laptop carts enable teachers to bring "rolling computer labs" into their classrooms.

The current practice of effective technology integration across the curriculum by teachers and media specialists has been evaluated in several ways including but not limited to the regular monitoring of lesson plans by building administrators, observations and walk-throughs by building

and district administrators.

The digital literacy and media/tech teachers have a level of technology proficiency that supports the learning and research that occurs in that environment. The elementary and intermediate digital literacy teachers and middle school media/tech specialists support classroom curriculum as well as teach courses to all students that support NJCCCS 8.1 regarding hardware and software troubleshooting, validating sources, copyright, fair use, citing sources, netiquette and cyber safety. The high school media specialist is a resource for technology in the media center.

The needs of staff are evaluated by building and central administration and growth opportunities are provided on the Professional Development Plan (PDP). Staff needs are also evaluated at the department level, grade level, and district level. The use of surveys and feedback forms also help assess need.

The needs of students are evaluated by classroom teachers, and building and central administrators. Students are looking for authentic experiences in designing computer programs, software, and have remote access to their school logins. Students would like to be able to design websites, create movies, and create graphics, photo and 3-D effects. Students in middle school have access to these digital tools twenty- four hours a day, seven days a week as part of the district 1-1 iPad initiative which supports a learning environment where learning is more student directed and instruction is a collaboration between teacher and student.

Past professional development for teachers has supported the need for technology integration. To support staff development, the district continues to provide in-house technology training delivered through district technology coordinators, as well as consultants based on integration specialty. The district also facilitates out of district opportunities as dictated by teacher need. As a result, professional development that supports the learning of how to effectively integrate technology into the NJCCCS and CCS thereby enhances the opportunities for student achievement.

Past professional development for administrators included the opportunities to investigate and participate in the professional development opportunities. Opportunities continue to be provided for administrators to see the products of sustained professional development programs, which assist them with the knowledge of what teachers are creating to support the curriculum, and will in turn take back to the classroom. As resources become available within the district, administrators are made aware of the opportunities and have hands on exposure to ensure their knowledge of the tools available.

Ongoing and sustained professional development for educators include, but is not limited to, the use of Performance Plus (data analysis and curriculum mapping), Discovery Education, Genesis, use of iPads and student-owned devices in the classroom, online learning communities such as Schoology, along with the continued use of classroom websites utilizing tools such as blogs, online forums, surveys, and online assessments.

Ongoing and sustained professional development for administrators include, but is not limited to, the use of Performance Plus (data analysis and curriculum mapping), Performance Plus OLA (online testing), Genesis, cloud storage, and our online framework for measuring teacher effectiveness based on the Danielson Framework for Teachers.

Support for all staff, outside of professional development, is provided by the Teacher Coordinator of Instructional Technology, district Content Specialists, Support Specialists, building Technology Coordinators, and numerous teacher leaders throughout the district who use technology effectively and efficiently.

The professional development need presently identified relates to the ability to infuse technology more effectively into all curriculum areas supported by the NJCCCS and the Common Core Standards for Language Arts Literacy and Mathematics. An emphasis on the development of 21st century skills continues as a need districtwide.

Needs to Support Academic Achievement through the Integration of Technology

The needs of the district to support academic achievement for all students through the integration of technology include the opportunities for all district staff to be immersed in a learning environment that supports technology integration. Administrators and staff need to clearly understand how technology can support and enhance academic achievement. All faculty members have been given the opportunity to participate in the district teacher technology survey to assess levels of curriculum integration and to identify areas of need for professional development in effective technology integration. Sustained professional development at all levels will be expanded to continue the support of integrating technology into the curriculum. The immediate goal of the district is to utilize all available resources to allow for the infusion of technology into curriculum and to empower students to utilize technology to enhance their learning. District and school administrators will need to provide leadership and support to staff in order to ensure the effective infusion of technology in the classrooms as stipulated in the NJCCCS and Common Core Standards.

As the district sets higher goals for increasing teacher implementation of effective educational technology the need also arises for an increased number of devices available to students in grades K-5 and 9-12 in order to support student creativity and problem solving in a learner-based environment with access to the most current digital applications and infrastructure available.

Technology Maintenance and Support (Other Network, Telecommunications and email Service Needs)

Prioritize the identified needs

Providing our students with technology that supports 21st century digital learning by increasing the number of devices available to all students and staff is a constant priority in this district.

Equally as important is the need for ongoing Professional Development in order to increase the collaborations extending beyond the classroom. These are employed for authentic student problem-solving, and emphasis is placed on student-centered strategies that promote personal goal setting and self- monitoring. Professional development is also needed to increase teacher proficiency where the teacher supports instructional practices consistent with a learner-based approach as students attempt to research and solve issues of importance to them using 21st century skills such as critical and analytical thinking and problem-solving skills.

In order to meet these needs, the district must provide the resources necessary to continue to develop the school district into an educational institution that moves all members to the cutting edge of technology usage and integration to support student achievement and to prepare all students for success in a global society

3. **Three Year Goals for 2016-2019**

The results of the needs assessment show that educators across the district need sustained and ongoing professional development on how to integrate educational technology more effectively on a regular basis

Goal 1: To raise the level of effective technology integration provided in the learning experience of all students in grades K-12, and improve educators' current instructional practices as measured via administrative walkthroughs, surveys, and availability of suitable professional learning opportunities. All teachers will appropriately utilize technology as an accelerant to learning.

Goal 2: Technology resources and systems will be effectively integrated into teacher training and curriculum development to establish research-based instructional methods moving toward a more constructivist approach for district implementation.

Goal 3: Provide teachers with professional development opportunities on how to use virtual learning communities as part of regular classroom activities for effective use of technology to improve student achievement through communication, collaboration, problem solving and sharing knowledge.

The results of the needs assessment indicate the necessity for all students to have more access to digital resources, the Internet, and other educational technology in their daily learning to support student creativity and problem solving in a learner-based environment. Students also need more frequent access to and experience with taking online assessments.

Goal 4: Continue to upgrade and add additional Wireless Access Points at all Piscataway schools. Additional access points help support the ever-growing demands of a digital learning environment as well as the PARCC assessment.

Goal 5: Upgrade or replace the reaming Windows XP computers with Windows 7 or above.

Goal 6: Work toward providing all students equal access to digital resources on a daily basis.

Results of the needs assessment indicate that students must have the necessary technology proficiency skills and experience to actively learn content, analyze, and evaluate information online; students need experience using digital tools to collaborate, create and share knowledge and to take online assessments.

Results of the district technology survey indicate that students must have the necessary technology proficiency skills and experience to actively learn content, analyze, and evaluate information online; students need experience using digital tools to collaborate, create and share knowledge and to take online assessments.

Goal 7: All students will be technologically literate and proficient by the end of eighth grade as defined by NJCCCS 8.1. All students (grades K-12) will have a grade level appropriate understanding of how technology devices and programs operate and all students through frequent accessibility will use technology comfortably and effectively as part of their learning.

Goal 8: **:** Beginning in grade 2, students will be introduced to keyboarding skills and will be given the opportunity to practice said skills so as to become more comfortable and more proficient at using digital tools and taking online assessments. Students in grades 4 – 8 will be given opportunities to improve overall keyboarding skills of speed and accuracy. Keyboarding proficiencies will aid in student performance on online assessments.

Goal 9: Teachers and students will utilize the collaboration tools available that will enable students to participate in online learning communities where they can communicate original ideas, and collaborate to create and communicate knowledge. These blended learning environments will merge computers and face-to-face learning through the use of blogs, forums, wikis, surveys, polls, cloud storage, and online assessments.

Goal 10: Students will utilize productivity and multimedia resources to create a variety of original content that allows for a personalized learning experience.

These ten goals will be assessed through various measures over the span of the 2016-2019 time period. These measures will include how effectively integrated technology has been infused into lessons as seen in lesson plans and observations, online collaboration with students, communications between teacher and student, utilization of class websites and online learning communities, staff and student surveys, and ultimately student achievement as measured by local and state assessments.

The following chart shows the alignment of the Piscataway Technology Goals to the New Jersey Education Technology Goals.

NEW JERSEY EDUCATION TECHNOLOGY GOALS	Piscataway Township Schools TECHNOLOGY GOALS
Goal 1: All students will be prepared to excel in the community, work place and in our global society using 21st century skills.	Goals: 1, 2, 3, 4, 5, 6, 7, 8, 9 &10
Goal 2: All educators, including administrators, will attain the 21st century skills and knowledge necessary to effectively integrate educational technology in order to enable students to achieve the goals of the Core Curriculum Content Standards and experience success in a global society.	Goals: 1, 2, & 3
Goal 3: Educational technology will be accessible by students, teachers, and administrators and utilized for instructional and administrative purposes in all learning environments, including classrooms, library media centers, and other educational settings such as community centers and libraries.	Goals: 4,5,6, 7, 8, 9, & 10
Goal 4: New Jersey School districts will establish and maintain the technology infrastructure necessary for students, administrators and staff to safely access digital information on demand and to communicate virtually.	Goals: 4, 5, & 6 , 7 & 10

4. Professional Development- Ongoing, Sustained, Professional Development for Administrators, Educators and Staff

4. A) Professional Development activities for administrators, teachers, media specialists and staff:

Sustained professional development opportunities will be provided to support the administrative role in the infusion of technology. Proficiency and application trainings are offered to the entire leadership team from a variety of resources in and out of district. Administrators have the opportunity to attend professional development sessions sponsored by NJPSA/FEA that provide current information on how to be a leader in the age of technology, how to use technology in their responsibilities in their schools, how to support faculty in the use of effective technology integration. Administrators are invited to attend professional development courses to understand the use of technology and how to evaluate the effective integration of technology into classroom instruction through the use of system resources, web-based resources such as Discovery Education, and other interactive technologies. The office of Curriculum and Instruction supports professional development for administrators by providing access to workshops both locally and online via webinars, and by providing training on district purchased system resources for the implementation of district initiatives. Such systems include but are not limited to Performance Plus (data analysis and curriculum mapping). The district strives to provide relevant and authentic opportunities that build on prior knowledge to support the role of administrators.

Sustained professional development for teachers and media specialists is supported in a variety of ways both in and out of the district. Professional development within the Piscataway Township School District is designed to help staff meet the academic goals within our district's strategic plan. Topics of professional development have included a concentration on differentiation and technology infusion to help meet the individual needs of students while providing them the 21st century skills they need to succeed. In the 2016-2019 technology plan window, professional development opportunities will be varied and extensive. Examples of the offerings include full-day in-service workshops, several half-day school-based workshops, and after- school sessions

offered by district trainers. Additional opportunities for professional development training and collaborative professional learning will take place at faculty meetings, content-area department meetings, common planning meetings, flex meetings, vertical and horizontal articulation meetings, professional learning communities, university partnerships, and participation in district-wide and school- based academic committees. Individual as well as collaborative professional development will be offered within the district's professional development structure through Internet resources, professional consultants, peer observation, and membership in professional organizations. The office of Curriculum and Instruction supports professional development for teachers and media specialists by providing training on district purchased system resources for the implementation of district initiatives. Such systems include but are not limited to Performance Plus (data analysis, and curriculum mapping), and Schoology, an online learning community. Professional development opportunities through CMSCE (Center for Math, Science, Computer Education) at Rutgers University provides teachers and media specialists with knowledge and skills on a variety of topics that include 21st century learning, video conferencing, use of interactive whiteboards, and effective teaching strategies that infuse technology in the inclusive classroom. All staff members who receive professional development are encouraged to turnkey the training to colleagues at the aforementioned venues. Summer opportunities include mentoring training, new teacher orientation, and training on other district- identified needs.

The district strives to provide relevant and authentic opportunities that build on prior knowledge. The district will continue to use Charlotte Danielson's *Framework for Teaching*, John Hattie's *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement,* Understanding by Design (McTighe & Wiggins) and Alan November's Empowering Students with Technology as relevant research that will help to shape the integration of technology into curriculum and instruction to improve student achievement.

Professional Development Planned for 2016-2019

The Piscataway Township School District believes that ongoing, sustained, and high-quality professional development is essential to the growth of its administration and faculty, which in turn supports student achievement. The district's goal for the 2016-2019 school year is to provide differentiated professional development to meet the staff needs identified in the needs assessment and other staff identified needs through evaluation feedback. According to their responses, the participants identified a need for additional time to learn technology proficiencies, especially those skills related to web 2.0 technologies (i.e. Wikis, blogging, micro-blogging, Skype, face-time, social-networking, web-based applications, podcasting), practice using 21st century tools, and time to plan for effective integration of those 21st century skills into their classroom curriculum to advance academic achievement. Other topics for professional development include Performance Plus (data analysis and curriculum mapping), Genesis (SMS), distance learning, video conferencing, using the district website to create surveys and quizzes, Schoology (online learning community), and using other online resources such as Discovery Education, Thinkfinity, and online techbooks as ways to infuse technology into all content areas at all grade levels.. We will continue to offer professional development opportunities to support the infusion of technology into the curricular process through district initiatives from the Curriculum and Instruction department.

The goal of the Piscataway School district is to provide staff development that models specific strategies and techniques for integrating higher-order thinking skills and engaged learning with the available digital tools and resources. This goal is targeted at utilizing technology as an accelerant for learning utilizing both the SAMR model and the Universal Design for Learning module. Both models allow for deliberate and purposeful integration of technology as needed by the learner to create student-led instructional opportunities. The district strives to continue to provide ongoing, sustained professional development for all administration and faculty so that educators can make better connections between technology use and student authentic problem-solving in the classroom and further advance student achievement.

The professional development will focus on taking a more learner-based approach to teaching where learning activities are diversified and based mostly on student questions, and where the

teacher serves more as a co-learner or facilitator in the classroom, and student projects are primarily student-directed, and the use of alternative assessment strategies including performance-based assessments, peer reviews, and student reflections are common-place.

Professional Development opportunities will be made available throughout the year during scheduled meeting times such as district in-service days, learning conferences, faculty and department meetings, PLC's, and team planning meetings.

The building technology coordinators (K-12), media/tech teachers (6-8), media specialists (4- 12), technology teacher (4-5), content specialists, and other teacher leaders, with support from the Office of Curriculum & Instruction, provide in-class support, model lessons infusing technology, and provide co-teaching opportunities that support the effective use and infusion of technology. During the 2016-2019 window, professional development opportunities will be offered through the following:

- District Learning Conference (all staff)
- School-based ½-day In-service workshops
- Professional Learning Communities
- Faculty, grade-level, department meetings
- Professional Development Partnership at Piscataway (PDPP) workshop sessions
- Center for Mathematics, Science, & Computer Education (CMSCE) at Rutgers University
- Online learning opportunities
- Grant-funded opportunities

Inherent in the professional development opportunities are provisions for turnkey training sessions with colleagues. Sustained support for the successful implementation of skills gained at all training opportunities will be provided at subsequent professional development opportunities. Based upon the needs of individual schools, the school-based day workshops may be used to revisit and reflect upon the professional development acquired.

Projection of professional development activities through 2019

The projected professional development for school years, 2017-2018 and 2018-2019, will support the initiatives of the 2016-2017 school year. In the spring 2017 and the spring of 2018, the district Curriculum and Instruction Department along with district administrators, will reassess needs and plan for differentiated professional development from the most effective providers to support the faculty, administration, in all district initiatives and to support the infusion of technology into the curricular process. The department of Curriculum and Instruction will use district-selected surveys to determine staff needs and to support infusion. The ongoing revision of the technology curriculum will provide a great opportunity to continue the dialogue about curriculum infusion and how to support it in all curriculum areas in the upcoming years. The district will continue to deliver professional development to administration and faculty in a variety of methods, allowing for differentiated learning. Differentiated professional development includes offering different levels of workshops that build on previous knowledge and skills, a variety of workshops on different proficiencies, and/or documentation on proficiencies to support individuals that prefer learning on their own. Documentation is available through the Curricular Technology Department, on the district public drives, and on the district website (Staff) when applicable.

Professional development will continue to be provided by a variety of providers that include but are not limited to the following:

In district personnel

- District Supervisor of Instructional Technology
- teacher-leaders
- building technology coordinators
- building technology teachers
- building media specialists

- 4-8 content specialists,
- Professional Development Partnership in Piscataway

Out of District Providers

- CMSCE (Center for Math, Science, Computer Education), Rutgers University
- Center for Effective School Practices, Rutgers University
- Center for Innovative Education, Kean University
- Performance Plus
- Discovery Education (streaming video, web based video & professional development)
- PBS Teacherline (web-based professional development courses)
- Publishing vendors

A proficiency checklist and/or district technology surveys will continue to help determine the needs of district users. The effective integration of technology into curriculum is determined by administrative observations, walk-throughs, teacher lesson plans, and feedback from grade-level support and content specialists. Professional development opportunities will continue to be offered during district learning conferences, grade level and faculty meetings, quarterly in-service workshops, and other opportunities based upon availability of funding.

The financial resources to support professional development will be the responsibility of the Director of Curriculum and Instruction. Financial resources are acquired from the local, state, and federal funding. Grants, as available, are also used to support technology professional development. Financial resources also provide the opportunity to use outside providers/consultants to further support professional development. Time is also built into the district calendar to provide professional development days for faculty. Faculty and administration are also allowed time and financial support to attend approved professional development opportunities and conferences out of district. All the financial and time resources allow our faculty and administration to remain current in the ever-changing world of technology.

4. B) Professional Development for Technical Staff

Professional development for technical staff is supported in a variety of ways both in and out of the district and through online resources. The IT department uses the resources of the network administrator/director, service manager, and technicians to support increased learning. Technical professional development is budgeted for the technical staff to advance their learning outside of the district.

4. c) Professional Development on the Application of Assistive Technologies

Professional development for assistive technologies is supported in the school buildings when a child with special devices is assigned to a school. All teachers that will need to support the learning of such students are trained, including the administration and support staff. Training of such technologies is done by a variety of resources that include the district special services department members, specific case managers, special education teachers, or person(s) familiar with the equipment and/or software. Outside resources are used when needed, including the assistance from parents/guardians and organizations such as the commission for the blind. Professional development for district purchased software, such as Boardmaker and Earobics, are often supported by the Middlesex County ETTC who offers a variety of professional development in the area of assistive technology. The student IEP supports all assistive technologies and professional development is supported as needed. In addition, assistive technology will be used as interventions to enhance learning, when applicable.

Reflection and Adjustment Plan

5. Evaluation Process: Evaluation is an essential element for planning effective and efficient use of technology. An underlying goal of this three year tech plan is to integrate technology into curricula and instruction to promote 21st century skills and global collaboration enabling students to meet challenging academic standards while developing life-long learning skills. Data will be collected, using a variety of methods, for analysis and data driven decision-making.

Evaluation methods and tools employed by the district include but are not limited to the following.

- **Documentation and record keeping** *(staff development records; hardware/software inventories)*
- **Obsolescence plan** *(IT; Board Resolution)*
- **Check listing** *(Technology Proficiency Self-Assessment ;)*
- **Staff/student/community surveys** *(Staff computer usage; Student computer usage; Web based; Distance Learning Questionnaire)*
- **Staff/student evaluation forms (software/services/proficiency training/professional development)** *(Staff Development Evaluation Forms; distance Learning Evaluation Forms)*
- **Analysis of ticket program** *(IT/Ticket System Daily Reports/Phone Logs)*
- **Reports and presentations** *(District/School/Class websites; Board Curriculum & Facilities Committee: Budget Plan, District Electronic Bulletin Board)*
- **System reliability, functionality and compatibility**
- **State assessment of NJCCCS and Common Core State Standards** *(NJASK, HSPA, NJTAP-IN)*
- **Observations using Achieve NJ- Danielson Framework for Teacher Evaluation***(formal classroom observation; summative evaluation; Professional Growth Plans; Walk-throughs)*
- **Student Digital Literacy badges** (artifacts as evidence to assess technology integration and proficiency in 21st century skills – grades 4-8)
- **Monitored and surveyed usage and needs** *(IT Department meetings with Curriculum & Instruction Supervisor of Instructional Technology, Tech Coordinators/Principals/Leadership Team to plan K-12 initiatives; Building Tech Coordinator reports; IT consultants)*
- **Milken's Seven Dimensions of Gauging Progress** *(a "road map" to assist districts with infusion of technology into the curriculum)*

Specific evaluation methods are outlined in the Implementation Strategies/Activity Tables. Other methods of evaluation will be added to the present Implementation Strategies/Steps as needed.

Hardware

- Hardware Inventories: Maintained by the district IT department, accurate inventories lead to efficient management of hardware for budgeting, relocation, repurposing parts, and obsolescence. This measure leads to more reliable access for users and efficient spending.

- District tool: Electronic repair ticket database. At all building levels, users report repairs directly to IT Center through phone or email communications. The ticket is logged into the ticket database and the person receives a ticket confirmation via email. Building technology coordinators tend to minor troubleshooting and repairs as directed by the IT manager. The ticket system provides ease of communication, thereby generating a quicker response time to support reliability. Daily data reports are analyzed and actions modified by district IT team for greater efficiency.

Hardware Conclusions:

  - Need to obsolesce equipment that has a high total cost of ownership (TCO).
  - Need to purchase additional hardware as necessary to implement district initiatives and to provide all students better access to current digital resources and online collaboration tools.
  - Repurpose equipment that will provide needed services to support curriculum integration and infusion in classrooms.
  - Need to continue to obsolesce and replace administrative machines with desktops, laptops, or tablet notebooks.
  - Need to plan and budget network and user hardware for upgrades in operating systems and district office software.

Software

- Staff/Student Forms for Evaluation of Resources, and Services: Evaluation of resources is completed to ensure the correlation to NJCCCS, Common Core State Standards, equity and non-bias, ease of use, compatibility (system requirements) and reporting features. A range of educationally appropriate software is offered to a range of grade levels. Software available to a range of grade levels allows teacher and students to continue the use of familiar software applications and provides opportunities for differentiated instruction and efficient spending on multi-level software programs. The district plans to integrate and further implement web-based resources for students, teacher productivity, web-based collaborations, courses, and mentoring.

- Genesis (Student Management Software): Web based service to improve home-school connection includes a parent module for grades 4 -12. Cognos software will continue to be used in conjunction with Genesis to extract data and create reports for the district data warehouse for analysis, state reports, and action plans. Genesis software will allow central and building administrators and teachers the ability to generate data reports and disaggregate data.

- Systems 3000 (Financial Management Software): The district financial management system will provide the business office and administrative team the ability to generate detailed and required budgeting/spending reports for greater fiscal accountability and responsibility.

- Curricula frameworks and strategies will be supported by web based services (i.e. *Performance Plus (data analysis and curriculum mapping);* web based textbooks; online courses for faculty and students.

Software Conclusions

  - Need to provide more web based courses (staff/student) (ongoing)
  - Need to provide more access to online learning communities at all grade levels
  - Need to continue training of enhanced data reports and tools (ongoing)
  - Need to continue research, evaluation, and implementation of web based global collaborative opportunities and distance learning opportunities (ongoing)

Telecommunication Conclusions

- Telecommunication services are monitored by the IT department on an ongoing basis to ensure sufficient bandwidth to allow for simultaneous users across the district.

Telecommunication Conclusions

  - Need to increase Elementary and Intermediate schools, and District Administration Internet bandwidth to 100Mbps

Professional Development

Following the guidelines framed in Milken's Seven Dimensions of Gauging Progress, the district keeps its pulse on the uses of technology throughout the district. This assessment framework comes to education supported by the Milken Family foundation and the Milken Exchange on Education. This organization brings together national educators to collaborate on technological issues and learning, conducts research, and provides leadership in cutting edge issues on the impact of technology on learning and student achievement.

The structure of *The Seven Dimensions* serves as a guide for planning, implementation and assessment of technology's impact on learning. It serves as a tool to find strengths and weaknesses in renewing the school district 3-year technology plan. It provides the school district with guidelines to assess what it needs to do more of, less of, and do next, in meeting its goals and objectives for technology. School boards, administration, and community will be looking for results from their investment in technology. Policymakers want tangible evidence.

The framework is comprised of (7) seven interdependent dimensions and poses questions that help to evaluate technology to support integration, student achievement, and the development of life-long learning skills.

1. LEARNERS: Are students using technology in ways that deepen their understanding of academic content and advance their knowledge of the world around them?
2. LEARNING ENVIRONMENTS: Is the learning environment designed to achieve high academic performance by students?
3. PROFESSIONAL COMPETENCY: Are educators fluent with technology and do they effectively use technology to the learning advantage of students?
4. SYSTEM CAPACITY: Is the entire education system reengineering itself to meet the need of students in this knowledge-based, global society?
5. COMMUNITY CONNECTIONS: Is the school-community relationship one of trust and respect, and is this translating into beneficial, sustainable partnerships in learning technology?
6. TECHNOLOGY CAPACITY: Are there adequate technologies, networks, electronic resources and support to reach the education system's learning goals?
7. ACCOUNTABILITY: Is there agreement on what success with technology looks like? Are there measures in place to track progress and report results?

These interdependent elements help assess if our schools are bringing technology-enriched learning opportunities to students for achievement. Budgets, administrative, and staff cooperation and commitment are necessary elements to accomplish technology infusion. The district has a faculty/administration professional development advisory board that assists with the professional development program to support the needs of faculty. The district provides more content specific training than generalized training to support the specialized use of technology in curricular areas.

6. Mid-Course Corrections: The district continuously monitors and surveys the effective use of technology and its impact on student achievement as it plans for new initiatives and other opportunities as they may arise.

The IT Department and the Department of Curriculum and Instruction work closely together to identify any changing needs in hardware, software, or bandwidth throughout the district. The IT Manager and Supervisor of Instructional Technology meet regularly with building tech coordinators to review monthly reports, assess building needs, and plan for implementation. During monthly articulation meetings, district administrators, principals, and leadership teams plan and review K-12 initiatives.

The administrative staff looks for opportunities to use technology and is agreeable to support teacher ideas and enthusiasm to try innovative uses of technology to support learning and student achievement. They strongly support our professional development program and reciprocal communication enhances planning with the curricular technology department.

District administration has a research-based vision and supports a standards–based approach to professional development that provides a solid framework for technology infusion. The district continues its work toward establishing a solid knowledge base related to state standards and common core standards. The district continues to move forward with curriculum integration, data analysis and assessment, it will continue to move forward in using technology to improve student achievement and enabling students to meet challenging standards and develop life-long learning skills necessary for success in a 21st century global society.

7. Funding Plan: Anticipated and projected costs

Piscataway Township School District provides leadership in the area of technology by the assistant superintendent of curriculum and instruction, the district supervisor of special projects: instructional technology, the school business administrator, the IT director and IT service manager. The district team provides a balanced leadership and management team with curricular, administrative, and technological strengths.

Technology planning and budgeting is balanced because of this team approach. Equipment is effectively and efficiently relocated or used for parts throughout the district before being obsolesced. Budgeting is planned using a Total Cost of Ownership (TCO) approach. Many initiatives are planned in phases to support funding and phased implementation. The TCO approach has been in place, and the administrative leadership team, the Board of Education Facilities, Finance, and Curriculum committees support the approach to support fiscal responsibility.

Specialized technical services are used, short term, for projects that require specific skills. The use of such services began during the 2003-2004 school year as hourly part time technicians were employed when repair and maintenance needs are high and for large equipment initiatives. (I.e. summer initiatives).

IT resources and services available to ensure successful and effective uses of technology include:

2. Six (6) full-time technicians (maintenance & repair)
3. IT Systems Administrator (server administration, user accounts, backups)
4. Network Communications Specialist (maintenance, repair, troubleshooting, and wiring)
5. Data Systems Administrator (maintenance, updates, systems administration, training)
6. Instructional Technology Secretary/Media Circulation System Support
7. IT Secretary
8. Building Technology Coordinators [a stipend position] (some first-level troubleshooting and repairs; professional development support and turnkey training, maintain school web site maintenance)

The IT department uses an electronic ticketing system for repairs, has a specific telephone line for emergencies, and project request forms for special technology needs or requests. Timelines are created for district funded and building initiatives and are planned with building principals, administration, and the maintenance department. The maintenance department also has an on-line work order system.

IT procedures, IT forms, technology proficiency tip sheets, checklists, technical permission forms, district plans, and evaluations are available on the district and building public drives.

Genesis, the web based student management system, provides administration and faculty with access to student data, period by period attendance, a grade book and a parent module to support the home-school connection. This web-based student management system is SIF compliant and the vendor is on the state list for approved vendors for NJSMARTS.

B. Funding Sources

The following table provides projected costs of technologies to be acquired and related expenses (hardware/software, digital, curricular, upgrades, services) to achieve the goals of this plan, and reflect the anticipation of an increase in state funding:

Technology Plan Checklist for NJ School Districts/Charter Schools (2013-2016) Three Year Technology Plan Funding Table				
ITEM	**FEDERAL FUNDING**	**STATE FUNDING**	**LOCAL FUNDING**	**MISC. (e.g. donations)**
Technology Equipment Purchased				
2013-2014			$556,000	
2014-2015			$570,000	
2015-2016			$590,000	
Technology Equipment Leased				
2013-2014			$338,817	
2014-2015			$508,225	
2015-2016			$677,634	
Network Capacity	USC (e-rate)			
2013-2014	$8,568		$8,232	
2014-2015	$8,568		$8,232	
2015-2016	$8,568		$8,232	
Internet Connectivity and	USC (e-rate)			
2013-2014	$20,934		$36,675	
2014-2015	$34,884		$33,516	
2015-2016	$34,884		$33,516	
Filtering Software				
2013-2014			$35,000	
2014-2015			$35,000	
2015-2016			$35,000	
Maintenance Policy and Plans				
2013-2014			$180,000	
2014-2015			$187,000	
2015-2016			$194,000	
Software, digital curricular services, online resources				
2013-2014			$197,081	
2014-2015			$204,000	
2015-2016			$217,000	
Technical Services				
2013-2014			$70,000	
2014-2015			$75,000	
2015-2016			$52,000	

Salaries (IT) 2013-2014 2014-2015 2015-2016			 $613,165 $621,648 $641,401	
Staff Development 2013-2014 2014-2015 2015-2016			Services & Salaries $104,000 $110,000 $115,000	

The following school district actions will continue the management and efficient use of funds for the total cost of technology ownership (2016-2019):

- Continue to plan and fund technology to support administrative systems that increase efficiency and accuracy
- Continue to plan and fund technology to support student achievement
- Continue to incorporate the cost of technology distribution and hardware into plans for any renovation and construction.
- Continue to seek grants and other forms of support to provide technology and related services to the district.
- Continue to seek and work with corporate partners to establish model installation of technology and staff training.
- Continue to apply for federal, state, and other funding opportunities available to education.
- Continue to follow a relocation and obsolescence plan for hardware.
- Continue to evaluate use of technology and its effect based on data analysis.
- Continue to communicate to the stakeholders the total cost of ownership and involve the stakeholders in planning.

E. Technology Plan Creation Date

This 2016-2019 three year technology plan was created on July 19, 2016, and includes the following elements:

- Goals and strategies for using telecommunications and information technology;
- A professional development strategy;
- An assessment of telecommunications services, hardware, software, and other services needed;
- Budget resources; and
- An ongoing evaluation process.

IMPLEMENTATION PLAN
July 1, 2016- June 30, 2019

District and school strategies/activities are organized by year and correlated with district technology goals.

All strategies/activities indicated person(s) responsible for research, planning, budgeting, implementation, support, and evaluation. Strategies/activities, with goal correlation, are also provided for district and administrative technology.

Cross-Content Applications of Standards

Technology tools provide opportunities for enhanced teaching and learning in all subjects at all grade levels for all students. Research tools and resources, available through the use of technology support content areas for student achievement. Technology provides the ability to access mentors and resources, provide graphical and visual representations, real data and problem solving situations, provide support for acquisition of enduring understandings, content and skills as demonstrated by student performance assessments. Technology allows for peer collaboration and publishing of student and teacher products for peer and professional collaboration, communication and mentorship. Technology supports a research standards based approach to curriculum and provides teachers, students, and parents with opportunities to improve learning and enhance student achievement.

Technology Literacy Skills

All students will acquire information technology literacy skills through a planned approach as students move through the grade levels. The K-8 teachers will be aware of the technology proficiencies to be introduced, practiced and applied/reinforced in the classroom as listed in the NJCCCS 8.1. Students will meet the standards set forth in the NJCCCS 8.1 through introduction, practice, and application of technology literacy skills during their Digital Literacy (K-5) and Media/Tech class (6-8). Middle school students will apply those skills in all classes everyday with their iPads as part of the district's 1-1 computing initiative. Piscataway High School students elect courses in business, applied technology, broadcast journalism/TV, and radio production that meet their needs, interests, school requirements, and the content standards. Students will apply technology literacy skills across all content areas through problem-based learning in the classrooms via personal devices with access to the district's wireless network, wireless carts throughout the building, and in the media center, computer labs/classrooms, and resource labs to support the achievement of the NJCCCS standards.

Equitable Access

All students regardless of gender, race, national origin, special need and religious affiliation have equitable access to educational technology. Special needs are met in collaboration with the student's case manager, the district instructional supervisors, and the district IT Manager. Assistive technology and specialized hardware/software are planned to meet individual needs. Accommodations are made for individual differences at all grade levels.

Shared Resources

Projects that are funded from federal, state, and local sources and need planned access

to technology environments and resources are coordinated, as needed. Special needs and requests are coordinated with the project leader, the assistant superintendent of curriculum and instruction, and the IT director. The coordinator of community outreach will also coordinate with the office of curriculum and instruction and the IT department for maximum use and customization for needs.

Innovative Strategies

Innovative strategies are supported and developed for use in the instructional classroom and open school environment by the assistant superintendent of curriculum and instruction, the supervisor of instructional technology, and district supervisors of curriculum areas with input from principals, department chairpersons, content specialists and teachers. Innovative strategies are budgeted and/or supported by federal, state, grant, and local sources. (See Implementation Tables for innovative strategies by school grouping).

Parental Involvement

The district, school and class websites, cable television broadcasting, district and school meetings and workshops, and curriculum showcases help to increase parental awareness and involvement. Communication between school and home is also strengthened through the use of email and the district's phone messaging system. Content areas offer web-based resources for parents to support and reinforce instruction and the home-school connection. Conferences provide workshops for parents that include technology resources, in the areas of literacy and mathematics (K-5), and K-12 career days/evenings provide opportunities for real world exposure to careers in the field of technology or that include technology. Back-to-school night and parent conferences provide opportunities for parents to be informed about the technology being applied in their child's education. Parents of incoming 6th grade students are invited to attend an informational night on the district 1-1 computing program (iPad program) where the parents will learn about the academic benefits of the initiative. The exposure to technology in the educational setting for parents enables them to support and reinforce the instruction their child(ren) receive(s) in Piscataway Township Schools. The Genesis Parent Module allows for parents to login and see their child(ren) class assignments/tests by subject, assignment/test grades, student attendance, and discipline, enabling a more powerful home-school connection. Cable television broadcasting and other video presentations highlight and inform parents of the infusion of technology into curriculum. The district website contains parent sections that provide further curriculum information.

The Superintendent's vision for communication is to ensure that it allows parents to see what goes on in their child's education by providing information to the community and parents using a variety of technologies.

Community Outreach (Adult Literacy)

The district's adult education and community outreach courses include opportunities for adult literacy in technology. The coordinator of community outreach schedules, publicizes, and registers community members for the courses. The coordinator of community outreach also communicates all technology needs to the IT department who in turn assures that the necessary technology requirements are available for the planned courses. School technology facilities are used for the adult education courses.

Piscataway Township Schools- District

District Strategies/Activities & Embedded School Strategies/Activities Tables

Goal #1: To raise the level of effective technology integration provided in the learning experience of all students in grades K-12, and improve educators' current instructional practices as measured via administrative walkthroughs, surveys, and availability of suitable professional learning opportunities. All teachers will appropriately utilize technology as an accelerant to learning.

Timeline	Strategies/Activities	Budget Amount/ Source	Persons Responsible	Evaluation
2016-2019 (ongoing)	Coordinate with Curriculum & Instruction department to assess where the need for technology integration will be most effective.	Local Funding/ Grants	Supervisor of Instructional Technology, Building Tech Coordinators;	Action plan based on data; Walk-throughs
2016-2019 (ongoing)	Provide opportunities for teachers to learn how to integrate the technology proficiencies (8.1) into their lessons.	Local Funding/ Grants	Supervisor of Instructional Technology, Principals Support Specialists, Building Tech Coordinator;	SAMR evaluation rubric; Use of integrated technology assessed by end productions, evaluations, observations
2016-2019 (ongoing)	Assess curricular needs and resources to meet student needs based on data analysis.	Local Funding/ Grants	Assistant Superintendent of C&I, Supervisor of Instructional Technology, Principals; District Supervisors,	Report
2016-2019 (ongoing)	Support faculty on the maintenance and enhancement of LMS sites for creating a blended learning environment.	Local Funding/ Grants	Supervisor of Instructional Technology, Building Tech Coordinator; Principal	Updated and used Schoology sites; site analytics
2016-2019 (ongoing)	Continue to provide differentiated professional development to emphasize the infusion of technology into all content areas and the implementation of Century tools. (i.e. Wikis, blogging, microblogging, skype, social bookmarking, web-based	Local Funding/ Grants	Supervisor of Instructional Technology, Building Tech Coordinators; Principals	Usage reports; Integration into the curriculum; SAMR walkthroughs; UDL walkthroughs; surveys and teacher feedback
2016-2019 (ongoing)	Continue to develop web based learning portals for organization of resources. Assess the use of web based learning portals and revise, as needed	Local Funding/ Grants	Asst. Super of C&I District Tech Coordinator; IT Director	Usage of web based services;

Piscataway Township Schools- District
District Strategies/Activities & Embedded School Strategies/Activities Tables

Goal #2: Technology resources and systems will be effectively integrated into teacher training and curriculum development to establish research-based instructional methods moving toward a more constructivist approach for district implementation.				
Timeline	**Strategies/Activities**	**Budget Amount/ Source**	**Persons Responsible**	**Evaluation**
2016-2019 (ongoing)	Provide professional development for teachers on effective use of devices in the classroom and Constructivist teaching strategies	Local Funding/ Grants	IT Service Manager; Supervisor of Instructional Technology Building Technology Coordinator; Principals;	Usage reports; Integration into the curriculum; SAMR walkthroughs; UDL walkthroughs; surveys and teacher feedback
2016-2019 (ongoing)	Continue training and support on use of Genesis (student management system) with an emphasis on report generation for data analysis.	Local Funding/ Grants	Data Systems Admin; Asst. Super of C&I; Leadership Team	Usage of data reports for analysis

Piscataway Township Schools- District
District Strategies/Activities & Embedded School
Strategies/Activities Tables

Goal #3: Goal 3: Provide teachers with professional development opportunities on how to use virtual learning communities as part of regular classroom activities for effective use of technology to improve student achievement through communication, collaboration, problem solving and sharing knowledge.				
Timeline	**Strategies/Activities**	**Budget Amount/ Source**	**Persons Responsible**	**Evaluation**
2016-2019 (ongoing)	Provide professional development for teachers on effective use of devices in the classroom and Constructivist teaching strategies	Local Funding/ Grants	IT Service Manager; Supervisor of Instructional Technology Building Technology Coordinator; Principals;	Usage reports; Integration into the curriculum; SAMR walkthroughs; UDL walkthroughs; surveys and teacher feedback
2016-2019 (ongoing)	Continue training and support on use of Genesis (student management system) with an emphasis on report generation for data analysis.	Local Funding/ Grants	Data Systems Admin; Asst. Super of C&I; Leadership Team	Usage of data reports for analysis
2016-2019 (ongoing)	Support faculty on the maintenance and enhancement of LMS sites for creating a blended learning environment.	Local Funding/ Grants	Supervisor of Instructional Technology, Building Tech Coordinator;	Updated and used Schoology sites; site analytics

District Strategies/Activities & Embedded School Strategies/Activities Tables

Piscataway Township Schools- District

Goal #4: Continue to upgrade and add additional Wireless Access Points at all Piscataway schools. Additional access points help support the ever-growing demands of a digital learning environment as well as the PARCC assessment.				
Timeline	**Strategies/Activities**	**Budget Amount/ Source**	**Persons Responsible**	**Evaluation**
Summer 2016	Install network wiring for additional WAPs at K3 schools.	$23,200.84/local	NetQ / Manager Information Systems/ Network Communications Specialist	Asst. Superintendent; IT Director; IT Service Manager Internet Bandwidth Monitoring tools
Summer 2016	Install network wiring for additional WAPs at Intermediate schools.	$11,741.44/local	NetQ / Manager Information Systems / Network Communications Specialist	Asst. Superintendent; IT Director; IT Service Manager Internet Bandwidth Monitoring tools
Summer 2016	Install network wiring for additional WAPs at Middle schools.	$18,215.15/local	NetQ / Manager Information Systems/ Network Communications Specialist	Asst. Superintendent; IT Director; IT Service Manager Internet Bandwidth Monitoring tools
Summer 2016	Install network wiring for additional WAPs at High School.	$16,844.21/local	NetQ / Manager Information Systems / Network Communications Specialist	Asst. Superintendent; IT Director; IT Service Manager Internet Bandwidth Monitoring tools
Summer/Fall 2016	Configure and install networking equipment and WAPs at K3 schools.	$102,000.00/local	EPlus / Manager Information Systems/ Network Communications Specialist	Asst. Superintendent; IT Director; IT Service Manager Internet Bandwidth Monitoring tools
Summer/Fall 2016	Configure and install networking equipment and WAPs at Intermediate schools.	$48,950.00/local	EPlus / Manager Information Systems	Asst. Superintendent; IT Director; IT Service Manager Internet Bandwidth Monitoring tools
Summer/Fall 2016	Configure and install networking equipment and WAPs at Middle schools.	$70,000.00/ local	EPlus / Manager Information Systems/ Network Communications Specialist	Asst. Superintendent; IT Director; IT Service Manager Internet Bandwidth Monitoring tools
Summer/Fall 2016	Configure and install networking equipment and WAPs at High School.	$75,750.75/local	EPlus / Manager Information Systems/ Network Communications Specialist	Asst. Superintendent; IT Director; IT Service Manager Internet Bandwidth Monitoring tools

District Strategies/Activities & Embedded School Strategies/Activities Tables

Piscataway Township Schools- District

Goal #5: Upgrade or replace the remaining Windows XP computers with Windows 7 or above.				
Timeline	**Strategies/Activities**	**Budget Amount/ Source**	**Persons Responsible**	**Evaluation**
	Transportation department – 6 computers – (supervisor, displacher, clerk, 3 bus drivers) to be replaced with new Win 7 computers.		IT Service Manager/Building IT Tech	
	Schor school – Room 41,42 and 43 - 4 computers (Gateway P5) that need to be replaced with Windows 7 computers.		IT Service Manager/Building IT Tech	
	Sodexo cafeteria computers – Upgrade existing 22 – ((Knollwood (1), Randophville (1), Grandview (2), Eisenhower (1), Arbor (2), King (1), Conackamack (2), Schor (2), Quibbletown (2), High school (8)) POS computers to Win 7 during - Summer 2017		IT Service Manager/Building IT Tech	
	Quibbletown – One computer in the workroom behind the main office with Windows XP. It has bubble reader software and a Canon document scanner attached.		IT Service Manager/Building IT Tech	
	Arbor school - Need to be replaced – 15 Gateway P5 students stations. (Rooms 3, 4, 5, 20, 21 (2), 23, 31, 33 (3), 34)		IT Service Manager/Building IT Tech	
	Arbor school - Need to be upraded to Windows 7 – 11 Gateway P6 students stations. (Rooms 10, 11, 13, 15, 16 (4), 17, 37 (2))		IT Service Man	

	Children's Corner by the River - has 4 Gateway E2600S Win XP desktop computers that would need to be replaced to upgrade to Win 7.		IT Service Manager/Building IT Tech	
	Grandview - 4 student computers (Rm. 1 (2), Rm. 2 (2)) need to be upgraded to Win 7.		IT Service Manager/Building IT Tech	

District Strategies/Activities & Embedded School Strategies/Activities Tables

Piscataway Township Schools- District

Goal #6: Work toward providing all students equal access to digital resources on a daily basis.				
Timeline	**Strategies/Activities**	**Budget Amount/ Source**	**Persons Responsible**	**Evaluation**

District Strategies/Activities & Embedded School Strategies/Activities Tables

Piscataway Township Schools- District

Goal #7: All students will be technologically literate and proficient by the end of eighth grade as defined by NJCCCS 8.1. All students (grades K-12) will have a grade level appropriate understanding of how technology devices and programs operate and all students through frequent accessibility will use technology comfortably and effectively as part of their learning.

Timeline	Strategies/Activities	Budget Amount/ Source	Persons Responsible	Evaluation
2016-2019 (ongoing)	Create and modify digital literacy curriculum that addresses technology proficiency for grades K-8	Local Funding/ Grants	Assistant Superintendent of C&I, Supervisor of Instructional Technology, Principals; District Supervisors,	Digital checklist of technology proficiency
2016-2019 (ongoing)	Provide professional development for teachers on effective use of devices in the classroom and Constructivist teaching strategies	Local Funding/ Grants	IT Service Manager; Supervisor of Instructional Technology Building Technology Coordinator; Principals;	Usage reports; Integration into the curriculum; SAMR walkthroughs; UDL walkthroughs; surveys and teacher feedback
2016-2019 (ongoing)	Provide opportunities for teachers to learn how to integrate the technology proficiencies (8.1) into their lessons.	Local Funding/ Grants	Supervisor of Instructional Technology, Principals Support Specialists, Building Tech Coordinator;	SAMR evaluation rubric; Use of integrated technology assessed by end productions, evaluations, observations

2016-2019 (ongoing)	Continue to develop web based learning portals for organization of resources. Assess the use of web based learning portals and revise, as needed	Local Funding/ Grants	Asst. Super of C&I District Tech Coordinator; IT Director	Usage of web based services;

District Strategies/Activities & Embedded School Strategies/Activities Tables

Piscataway Township Schools- District

Goal #8: Beginning in grade 2, students will be introduced to keyboarding skills and will be given the opportunity to practice said skills so as to become more comfortable and more proficient at using digital tools and taking online assessments. Students in grades 4 – 8 will be given opportunities to improve overall keyboarding skills of speed and accuracy. Keyboarding proficiencies will aid in student performance on online assessments.

Timeline	Strategies/Activities	Budget Amount/ Source	Persons Responsible	Evaluation
2016-2019 (ongoing)	Schedule dedicated instructional time for all 2nd and 3rd grade students to learn and practice keyboarding skills	Local Funding/ Grants	Principals, Supervisor of Instructional Technology	Usage and performance based assessments and observation

District Strategies/Activities & Embedded School Strategies/Activities Tables

Piscataway Township Schools- District

Goal #9: Teachers and students will utilize the collaboration tools available that will enable students to participate in online learning communities where they can communicate original ideas, and collaborate to create and communicate knowledge. These blended learning environments will merge computers and face-to-face learning through the use of blogs, forums, wikis, surveys, polls, cloud storage, and online assessments.

Timeline	Strategies/Activities	Budget Amount/ Source	Persons Responsible	Evaluation
2016-2019 (ongoing)	Support faculty on the maintenance and enhancement of LMS sites for creating a blended learning environment.	Local Funding/ Grants	Supervisor of Instructional Technology, Building Tech Coordinator; Principal	Updated and used Schoology sites; site analytics; OLA results

District Strategies/Activities & Embedded School Strategies/Activities Tables

Piscataway Township Schools- District

Goal #10: Students will utilize productivity and multimedia resources to create a variety of original content that allows for a personalized learning experience.

Timeline	Strategies/Activities	Budget Amount/ Source	Persons Responsible	Evaluation
