

Williamsville Central School District

Smart Schools Bond Act

Investment Plan

Final - May 2016



TABLE OF CONTENTS:

Smart Schools Bond Act Draft Investment Plan Comments:..... 4

 1. Online questions and comments..... 4

 2. Written Comments or Questions: 4

WILLIAMSVILLE cENTRAL sCHOOL dISTRICT - Draft Investment Plan: Enhanced Wireless Connectivity 5

 Investment Plan Overview: 5

 Williamsville Central School District Instructional Program’s Purpose for Enhanced Connectivity: 5

Williamsville CENTRAL SCHOOL dISTRICT - Smart Bonds Act Wireless Connectivity Plan..... 6

Elementary schools..... 6

Middle schools 6

High schools 6

Summary..... 6

Williamsville Central School District - Wireless Connectivity System (Current Student Use):..... 7

 Grades K-2 - Objective 7

 Student Experiences 7

 Grades 3-4 -Objective 7

 Student Experiences 7

 Grades 5-6 - Objective 7

 Student Experiences 7

 Grades 7-8 - Objective 7

 Student Experiences 8

 Grades 9-12 - Objective 8

 Student Experiences 8

Williamsville Central School District – Technical Support, Student Usage, Staff Development 8

Williamsville Central School Technical Infrastructure - Smart Bonds Act Connectivity Project..... 9

 WILLIAMSVILLE CENTRAL SCHOOL DISTRICT – ENHANCEMENT OF WIRELESS CONNECTIVITY (METHODOLOGY) 10

 Access Points - Methodology 10

 Project Bandwidth - Methodology 10

 Project Wiring - Methodology..... 10

 Network switch Infrastructure – Methodology 10

 WILLIAMSVILLE CENTRAL SCHOOL DISTRICT’S SUPPORT OF THE WIRELESS NETWORK..... 11

 WILLIAMSVILLE CENTRAL SCHOOL DISTRICT’S INTEGRATION OF WIRELESS CONNECTIVITY PROJECT WITH THE DISTRICT’S LONG-RANGE TECHNOLOGY PLAN 11

Williamsville Central School District – Wireless Connectivity – cost summary..... 12

 Elementary School Level..... 12

Williamsville Central School District – Wireless Connectivity – cost summary..... 13

 Elementary School Level - Continued..... 13

TABLE OF CONTENTS:

Williamsville Central School District – Wireless Connectivity – cost summary..... 14
 Middle School Level 14

Williamsville Central School District – Wireless Connectivity – cost summary..... 15
 High School Level 15

Williamsville Central School District – Wireless Connectivity – cost summary..... 16
 Server Room 16
 Total Cost Summary 16

Williamsville Central School District – Long-Term Planning for Wireless Connectivity..... 17
 Williamsville Central School District’s Wireless Connectivity System Sustainability – Future Planning 17
 Williamsville Central School District’s Wireless Connectivity – Future Planning for Instruction 17

Wireless Access Point – Replacement and Expansion Plan (Statistics)..... 18

Williamsville Central School District -140203

Smart Bonds Act Draft Investment Plan

April 2016

SMART SCHOOLS BOND ACT DRAFT INVESTMENT PLAN COMMENTS:

1. Online questions and comments

<http://www.williamsvillek12.org/>

2. Written Comments or Questions:

Williamsville Central School District

Attn: Draft Smart Schools Investment Plan Committee

105 Casey Road

East Amherst, NY 14051

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT - DRAFT INVESTMENT PLAN: ENHANCED WIRELESS CONNECTIVITY

Investment Plan Overview:

Williamsville Central School District Instructional Program's Purpose for Enhanced Connectivity:

The Williamsville Central School District has implemented a wired and wireless connectivity infrastructure in each school building in order to support student programs. The District's first technology project focused on creating a wired Local Area Network in 2005. This project focused on adding wired connectivity to all three high school buildings and our four middle schools. The connectivity at our six elementary schools was completed by district electricians. The next major technology capital project occurred in 2009. This project involved the renovation of the District's main server room and the replacements of all switches in the district. Major improvements included adding appropriate air conditioning to the server room which resulted in a need to expand the space for additional servers and the other technology equipment. This project also included the upgrading of the switches in schools. These two prior projects addressed connectivity needs in the district. Both projects supported the wired locations of ports in classrooms, computer labs, and school offices. Over the last five years the district has installed wireless access points in our schools in central locations. The installation process was reactionary to requests from the instruction department and our schools. These installations were completed by district staff and the selected access locations were hallways and other open areas in the building. The intent was to provide broad coverage in each school building. Presently, all thirteen school buildings have the capability to provide wireless access to students and staff. However, the current wireless system is unable to accommodate the higher volume of devices that have been provided to students. The short-comings of the District's wireless system has become clear with the challenges it has faced in providing network connections to the district's middle schools for its 1:1 student issued device program. Our current wireless system has become overwhelmed by the number of users attempting to sign-on to the network through the centrally located access points. This has resulted in sign-on delays and students encountering slow processing times for their class work. In addition to the technology growth at the middle school level there is similar growth at the elementary and high school levels. The issuance of a 1:1 device program for students at these levels is not planned to occur at this point in time. However, the plan for new access points at these schools is included in the Smart Bond Act Investment Plan. In addition to providing a major improvement in device access this investment plan will also fully support online testing.

The expansion of the District's wireless system will also allow the district to comply with future New York State Education Department online testing requirements. Presently, the district does not have enough wireless connectivity to support this initiative. The District will add multiple access points to gyms, cafeterias, libraries, and other areas that could be used as a central testing location ins our schools.

The information herein addresses the planned wireless connectivity program for each school level.

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT - SMART BONDS ACT WIRELESS CONNECTIVITY PLAN

Elementary schools

Although the District is not assigning devices to students at this level it will be designing an implementation plan that is similar to what is being used at the middle school level. The plan is to provide students with access to carts that can store approximately thirty devices in their cabinets. The carts will be provided to each grade level at each of our six elementary schools. Presently, the plan is to provide one cart for each grade level. This cart program is likely to expand once the wireless connectivity is increased in these schools and it is expected that there will be multiple carts used for each grade level. At this point in time the District is not planning on providing one device for every student or one cart for every classroom. It is important that every classroom has connectivity. This design plan will also allow the district to have complete flexibility in providing online testing at the elementary level. The District has six elementary schools and the total number of devices that it projects as needed will be approximately 1,440 devices for student use. Teacher issued devices are expected to be one hundred fifty for the district. Total devices for the elementary level are anticipated to be 1,590. The program use of the devices

Middle schools

The Williamsville Central School District began providing 1:1 devices to middle school students in fifth grade in the 2013-14 school year. This was done at all four of its middle schools. It resulted in approximately 900 devices being distributed to students in order for them to be integrated into their instruction program. In each subsequent year. In the 2016-17 school year every middle school student will be assigned a 1:1 device. This represents approximately 3,200 devices that will be used each day by our middle school students. All of these devices require Wi-Fi access. In addition to the student devices that are connecting to the network there will be another 200 devices that will be used by teachers who are connecting to the network. This results in approximately 3,400 devices at the middle school level that will require wireless access.

High schools

The number of devices requiring wireless access at the high school level is dependent on the final technology program that will be implemented at this level by the District. The current projected plan is to define the type of device that students may bring into their school. The District's choose your own device plan will result in the need for at least one access point for each student. Based on our projected enrollment numbers this will require an estimated 3,300 devices plus 160 devices for teaching staff. This will require our network access at the high school level to support 3,475 devices. The program use of the devices

Summary

The number of devices that will need wireless access in the district is projected to be 22,545. This quantity does not include other devices that are brought into schools that will access the network. Presently, the District has an open network policy allowing Smartphones and tablets the ability to access the network through the District's security parameters. Presently, the private devices daily usage rates average. The District will need to monitor the volume of private devices accessing its system and decide if it wants to continue to allow open access to the network or if it is necessary to implement some form of restrictions to the network. At this point in time the total daily access volumes that are projected in the next three years should approach 30,000 devices per day.

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT - WIRELESS CONNECTIVITY SYSTEM (CURRENT STUDENT USE):

Grades K-2 - Objective

- Empower students to be productive, self-directed, and creative problem solvers through the use of technology
- Creating an awareness and familiarity with computer/tablet navigation
- Focus on utilizing digital tools for reading, speaking and math fluency
- Capturing student thinking and learning through use of digital tools

Student Experiences

- Book Creator to create ebooks tied to content learning
- Kahoot, Socrative and Nearpod to review learning and interact with content digitally
- Student-driven digital learning journals using Seesaw

Grades 3-4 -Objective

- Empower students to be productive, self-directed, and creative problem solvers through the use of technology
- Enriching student writing, creativity, and curriculum
- Introduction to Google Core Applications Suite for productivity
- Digital tools for demonstrating understanding of concepts

Student Experiences

- Capturing student learning and thinking through Book Creator and Explain Everything
- Accessing digital learning sites like WITS , IXL, Kids A-Z, and Spelling City

Grades 5-6 - Objective

- Empower students to be productive, self-directed, and creative problem solvers through the use of technology
- Enhancing digital productivity and creation skills
- Demonstrating learning and ability to understand content digitally
- Digital writing and word processing proficiency
- Digital responsibility, literacy and safety awareness
- Awareness of digital presentation and speaking skills

Student Experiences

- Creating writing samples and responses within Google Docs for all curricular areas
- Creating and publishing multi-media presentations within Google Slides
- Completing formative assessments with Socrative, Nearpod and Google Forms

Grades 7-8 - Objective

- Empower students to be productive, self-directed, and creative problem solvers through the use of technology
- Proficiency with digital creation tools and digital choices for showcasing learning
- Enhanced learning and ability to understand content digitally
- Increased digital writing, rigor, constructive feedback and word processing proficiency
- Digital responsibility, literacy and safety awareness
- Enhanced digital presentation and speaking skills
- Increased Internet research and digital literacy ability

Student Experiences

- Creating writing samples and responses within Google Docs for all curricular areas
- Creating and publishing multi-media presentations within Google Slides
- Completing formative assessments with Socrative, Nearpod and Google Forms
- Internet research to enhance and enrich digital writing, along with proper citations and

Grades 9-12 - Objective

- Use technology applications and skills to prepare students for college and career
- Empower students to be productive, self-directed, and creative problem solvers through the use of technology

Student Experiences

- Student-created writing and responses across all disciplines and subjects
- Student presentations and work products demonstrating student understanding of content and creativity
- Research and student work reflecting collection of information, notes, etc.
- Peer-to-peer and teacher-to-student collaboration and communication/feedback

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT – TECHNICAL SUPPORT, STUDENT USAGE, STAFF DEVELOPMENT

The district provides robust professional development on instructional technology best practices and uses aligned with the SAMR model implementation. These best practices and uses are introduced and reinforced on an annual basis by:

- The district has an instructional technology team that consists of 7 coaches assigned to cover the district to support and facilitate instructional technology goals with staff and students. The goals are aligned to district, school level, and in certain situations classroom goals.
- There is embedded staff development during scheduled work days for teachers occurs twice a year for teachers involved in our student 1:1 mobile learning program.
- There are weekly technology integrator coaching sessions are offered from September to March to reinforce district initiatives and facilitate collaborative learning.
- During staff development scheduled days, instructional specialists will arrange for instructional technology needs to be addressed for various stakeholder groups.
- The District provides students with special orientation programs at grade levels to introduce the devices, technology choices available to students and reviews acceptable use policies that are applicable to the assigned devices.
- By providing more access points, we can look to expand our student mobile learning initiatives and expansion at all grade levels to increase the amount, frequency and reach of the outline experiences. The statistical table attached to this

WILLIAMSVILLE CENTRAL SCHOOL TECHNICAL INFRASTRUCTURE - SMART BONDS ACT CONNECTIVITY PROJECT

Current District Access Speed:

The Williamsville Central School District currently has a 10 GB connection speed between school buildings. The District has a 1 GB connection from the external source for internet access. Our current BEDS day enrollment as of the 2015-16 school year is 9,976 students. The enrollment results in 100.24 Mbps connection speed per 1,000 students in our district. This meets the connection speed requirement for the Smart Schools Bond Act. Additionally, the 2015-16 long-term enrollment forecast shows that our district's future enrollment will decrease by 4.7% in the next five years. This decrease will increase the connection speed per 1,000 students for the District.

Current Wireless Network:

The current wireless access coverage in the district was installed in 2007. Since this installation date the District has been adding additional access points in schools based on instructional program requirements. The number of devices that are currently installed in the district are 638. Most devices are Avaya 8120 units that have a 2.4 Ghz that supports 802.11 abgn speeds. The average age of our devices is four years old. These devices are not dual frequency and students are encountering connection problems when a unit becomes overloaded with access requests.

The majority of our technology wiring is cat 5e. Due to the installation process used by the District there are some school installations where cat 5 is still in place. Schools that have Cat 5 will not support 1GB speeds. This wiring will need to change in the Smart Schools Bond Act project. This is especially important that this is changed in order to support online testing in these schools.

The District updated network switches in 2010. It presently has 243 switches which vary between ninety-six and forty-eight port devices. The switches have a 1 GB speed that is matched to our connection speed and they were all manufactured by Avaya.

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT – ENHANCEMENT OF WIRELESS CONNECTIVITY (METHODOLOGY)

Access Points - Methodology

When addressing the need to increase the wireless network the district is going to change the access locations from central points that currently are meant to serve multiple classrooms to providing an access point in every classroom. The district is also going to add multiple access points in locations that may be used for online testing. The objective is to provide close to one hundred percent coverage in our school buildings with expanded coverage in spaces that will be designated as large area testing locations. These spaces will receive multiple access points. The usage of multiple units will eliminate delayed connection and processing time for students during assessments. The specifications for the wireless access point unit that will be dual band radio a/c speed of 2.4-5.0 Ghtz. The new access points will improve the future capability of the district thereby reducing the fact that the units become obsolete due to their inability to receive data due to changing industry standards.

The District is aware that the access point licenses are not supported financially by the Smart Bonds Act. The license cost for the estimated 1,000 access point devices is \$54,000. The District will fund this expense through its General Fund budget. It will use either its budgeted New York State software or hardware aidable budget codes. The specific code that will be used will be determined after the District discusses the expense with the New York State Education Department's State Aid office.

Project Bandwidth - Methodology

The District is not actively contemplating a change in the bandwidth capability due to the fact that our student enrollment is decreasing. The District is continuing to investigate redundancy and disaster recovery initiatives that will insure our network survivability.

Project Wiring - Methodology

In order to meet the higher demand for wireless connectivity to our system there is a need to add new wiring and upgrade identified old wiring that is needed to handle the data speed and use requirements. The minimum rated wire to be installed will be CAT6.

Network switch Infrastructure – Methodology

The District will replace all district switches. The switches are currently five years old and when the replacement begins they will be seven years old. The new switches will be either ninety-six or forty-eight port devices. The processing speed will be capable of providing 1/10 GB speed.

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT'S SUPPORT OF THE WIRELESS NETWORK

The District has three full-time instructional technology people who will support the switches and access points. These people are able to trouble-shoot hardware problems and replace units when needed. The District also utilizes its Facility staff to assist in wiring and electrical issues that may impact the technology network. The District also utilizes an Erie 1 BOCES support service that provides network WAN services which includes trouble-shooting as well as network planning. In situations where our in-house and BOCES staff cannot resolve a network issue the District will contact product manufacturers for assistance. This assistance is provided to the District when product warranties are in effect.

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT'S INTEGRATION OF WIRELESS CONNECTIVITY PROJECT WITH THE DISTRICT'S LONG-RANGE TECHNOLOGY PLAN

The District's long-term technology plan will incorporate the use of wireless devices for student learning. The District has indicated in the plan that it is planning to support various devices that may change over time. Although the type of device may change over time our district's reliance on a wireless network to deliver instruction to our students has become a requirement of our program and of our technology plan. Our long-range plan focuses on training staff on their use of new technologies. It is anticipated that all new technologies will rely on the wireless network. The technology plan and the current implementation of student technology use relies on the technology infrastructure of the district. The usage of our Smart Bonds Act funds to enhance our wireless connectivity system in the District is addressing one of the most basic and important items in the District's technology program. By applying these items to this infrastructure item it addresses a current district technology need and is an area that will continue to be closely examined and addressed by the district in every long-term technology plan.

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT – WIRELESS CONNECTIVITY – COST SUMMARY

Elementary School Level

Country Parkway

Description	Quantity	Cost	Total
Access Points	52	\$780.00	\$40,560.00
Wiring	104	\$250.00	\$26,000.00
Switches			\$84,362.00
Patch Panels	1	\$250.00	\$250.00
Patch Panel Inserts	50	\$7.00	\$350.00
PDUs	3	\$300.00	\$900.00
Misc	0	\$0.00	\$0.00
Total			\$152,422.00

Dodge

Description	Quantity	Cost	Total
Access Points	51	\$780.00	\$39,780.00
Wiring	102	\$250.00	\$25,500.00
Switches	0	\$1,200.00	\$85,437.00
Patch Panels	0	\$250.00	\$0.00
Patch Panel Inserts	60	\$7.00	\$420.00
PDUs	4	\$300.00	\$1,200.00
Misc			\$0.00
Total			\$152,337.00

Forest

Description	Quantity	Cost	Total
Access Points	55	\$780.00	\$42,900.00
Wiring	110	\$250.00	\$27,500.00
Switches	1	\$1,200.00	\$79,824.00
Patch Panels	1	\$250.00	\$250.00
Patch Panel Inserts	45	\$7.00	\$315.00
PDUs	3	\$300.00	\$900.00
Misc			\$0.00
Total			\$151,689.00

Heim Elementary

Description	Quantity	Cost	Total
Access Points	52	\$780.00	\$40,560.00
Wiring	104	\$250.00	\$26,000.00
Switches	0	\$1,200.00	\$79,846.00
Patch Panels	0	\$250.00	\$0.00
Patch Panel Inserts	65	\$7.00	\$455.00
PDUs	3	\$300.00	\$900.00
Misc			\$0.00
Total			\$147,761.00

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT – WIRELESS CONNECTIVITY – COST SUMMARY

Elementary School Level - Continued

Maple East

Description	Quantity	Cost	Total
Access Points	51	\$780.00	\$39,780.00
Wiring	102	\$250.00	\$25,500.00
Switches	1	\$1,200.00	\$75,609.00
Patch Panels	2	\$250.00	\$500.00
Patch Panel Inserts	20	\$7.00	\$140.00
PDUs	3	\$300.00	\$900.00
Misc			\$0.00
Total			<u>\$142,429.00</u>

Maple West

Description	Quantity	Cost	Total
Access Points	56	\$780.00	\$43,680.00
Wiring	112	\$250.00	\$28,000.00
Switches	1	\$1,200.00	\$84,384.00
Patch Panels	1	\$250.00	\$250.00
Patch Panel Inserts	35	\$7.00	\$245.00
PDUs	4	\$300.00	\$1,200.00
Misc			\$0.00
Total			<u>\$157,759.00</u>

Total Elementary Schools

\$904,397.00

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT – WIRELESS CONNECTIVITY – COST SUMMARY

Middle School Level

Heim Middle School

Description	Quantity	Cost	Total
Access Points	56	\$780.00	\$43,680.00
Wiring	112	\$250.00	\$28,000.00
Switches			\$120,050.00
Patch Panels	3	\$250.00	\$750.00
Patch Panel Inserts	0	\$7.00	\$0.00
PDUs	7	\$300.00	\$2,100.00
Misc	0	\$0.00	\$0.00
Total			\$194,580.00

Mill Middle School

Description	Quantity	Cost	Total
Access Points	63	\$780.00	\$49,140.00
Wiring	126	\$250.00	\$31,500.00
Switches			\$125,037.00
Patch Panels	0	\$250.00	\$0.00
Patch Panel Inserts	75	\$7.00	\$525.00
PDUs	4	\$300.00	\$1,200.00
Misc			\$0.00
Total			\$207,402.00

Transit Middle School

Description	Quantity	Cost	Total
Access Points	77	\$780.00	\$60,060.00
Wiring	154	\$250.00	\$38,500.00
Switches			\$128,779.00
Patch Panels	2	\$250.00	\$500.00
Patch Panel Inserts	70	\$7.00	\$490.00
PDUs	8	\$300.00	\$2,400.00
Misc			\$0.00
Total			\$230,729.00

Casey Middle School

Description	Quantity	Cost	Total
Access Points	96	\$780.00	\$74,880.00
Wiring	192	\$250.00	\$48,000.00
Switches			\$126,228.00
Patch Panels	1	\$250.00	\$250.00
Patch Panel Inserts	90	\$7.00	\$630.00
PDUs	16	\$300.00	\$4,800.00
Misc			\$0.00
Total			\$254,788.00

Total Middle Schools

\$887,499.00

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT – WIRELESS CONNECTIVITY – COST SUMMARY

High School Level

North High School

Description	Quantity	Cost	Total
Access Points	121	\$780.00	\$94,380.00
Wiring	242	\$250.00	\$60,500.00
Switches			\$126,418.00
Patch Panels	5	\$250.00	\$1,250.00
Patch Panel Inserts	18	\$7.00	\$126.00
PDUs	5	\$300.00	\$1,500.00
Misc (Wall Rack)	1	\$200.00	\$200.00
Total			\$284,374.00

South High School

Description	Quantity	Cost	Total
Access Points	112	\$780.00	\$87,360.00
Wiring	224	\$250.00	\$56,000.00
Switches			\$141,362.00
Patch Panels	2	\$250.00	\$500.00
Patch Panel Inserts	80	\$7.00	\$560.00
PDUs	8	\$300.00	\$2,400.00
Misc			\$0.00
Total			\$288,182.00

East High School

Description	Quantity	Cost	Total
Access Points	109	\$780.00	\$85,020.00
Wiring	218	\$250.00	\$54,500.00
Switches			\$133,038.00
Patch Panels	4	\$250.00	\$1,000.00
Patch Panel Inserts	20	\$7.00	\$140.00
PDUs	7	\$300.00	\$2,100.00
Misc			\$0.00
Total			\$275,798.00

Total High Schools

\$848,354.00

WILLIAMSVILLE CENTRAL SCHOOL DISTRICT – WIRELESS CONNECTIVITY – COST SUMMARY

Server Room

Description	Quantity	Cost	Total
Access Points	5	\$780.00	\$3,900.00
Wiring	100	\$250.00	\$25,000.00
Switches			\$504,950.00
Patch Panels	100	\$250.00	\$25,000.00
Patch Panel Inserts	100	\$7.00	\$700.00
PDU's	50	\$300.00	\$15,000.00
Misc (Wall Rack)	4	\$200.00	\$800.00
Total			\$575,350.00

Total Cost Summary

April 2016 Estimate

Direct Expenses

High Schools	\$848,354.00
Middle Schools	\$887,499.00
Elementary Schools	\$904,397.00
Server Room	\$575,350.00
Totals	\$3,215,600.00
	\$
Incidental Expenses (Architect and other expenses)	259,131.00
Total Estimated Smart Bonds Project Cost	\$3,474,731.00
Williamsville Smart Bonds Allocation	\$3,474,731.00
Unexpended Smart Bonds Allocation Amount	\$0.00

Williamsville Central School District’s Wireless Connectivity System Sustainability – Future Planning

The expansion of the District’s wireless connectivity will address the intended expansion on the use of wireless devices used by students each day. The statistical table attached to this plan estimates that there will be 15,487 wireless devices in use in the district each school day. The District requires a robust wireless infrastructure that is able to provide immediate network connections for students and staff in each classroom and teaching area. This expansion considers full device integration in the District. Therefore unless there is a major change in technology the infrastructure network should support the District wireless program for at least ten years into the future. The District will plan to replace the access points and switches five to seven years after the Smart Bond Capital Project is completed. The replacement plan for this equipment will be based on the fiscal circumstances of the District in 2022. Based on the District’s current Long-Term Financial Plan it projects that the Network switch and access device upgrade will be completed through a Capital project that will require New York State Education Department review and approval. A capital project will also be able to address any major changes in technology that should be completed when this work is completed.

Williamsville Central School District’s Wireless Connectivity – Future Planning for Instruction

The goal of all instructional programs is to continue to meet the changing needs of your student population. These needs are impacted by dramatically by technology. Therefore changes in technology must be carefully integrated into the future curriculum of the school district. The expansion of the wireless connectivity program in this project will position the District to review and implement instructional methods for each district student by using a wireless device. The future may result in virtual textbooks and other similar instructional applications that will require a wireless device. This comprehensive infrastructure project will allow the district to advance its instructional program in a wireless environment without concern for deficiencies in online connections. At this point in time the implementation of a comprehensive wireless like the District is putting in place will be the building block for all technology advancement that may occur in the District for the next ten years. The new wireless connectivity will allow students to have more frequent opportunities to utilize technology tools and applications that will enhance their learning experiences with curriculum, instruction, and assessment and it will prepare students for college and career; thereby empowering them to be productive, self-directed, and creative problem solvers through the use of technology.

WIRELESS ACCESS POINT – REPLACEMENT AND EXPANSION PLAN (STATISTICS)

School	Number of Classroom Access Points	Testing area Access Points	Other Access Point Locations	Total Access Points	Projected Number of student Devices	Projected Number of teacher Devices	Personal Devices that will access the network	Total Number of Personal and District Devices
Heim elem.	42	10	2	54	240	25	50	315
Dodge elem.	41	10	2	53	240	25	50	315
Forest elem.	45	10	2	57	240	25	50	315
Country Parkway elem.	41	10	2	53	240	25	50	315
Maple East elem.	41	10	2	53	240	25	50	315
Maple West elem.	46	10	2	58	240	25	50	315
Casey middle	81	15	4	100	692	50	675	1,417
Heim middle	61	15	4	80	642	50	625	1,317
Transit middle	62	15	4	81	982	50	1050	2,082
Mill middle	58	15	4	77	835	50	800	1,685
East high	89	20	4	113	1025	50	1100	2,175
South high	92	20	4	116	970	50	980	2,000
North high	101	20	4	125	1415	60	1400	2,875
AIM	4	0	0	4	20	3	23	46
TOTAL	804	180	40	1,024	8,021	513	6,953	15,487