2020-2025

District Technology Plan

Effective
December 8, 2020 - June 30, 2025

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SECTION 1

GENERAL INTRODUCTION/BACKGROUND

1.1 School District of Manatee County (SDMC) Mission Statement

The School District of Manatee County will educate and develop all students today for their success tomorrow.

1.2 School District of Manatee County Vision Statement

The School District of Manatee County will be an exemplary student-focused school system that develops lifelong learners to be globally competitive.

1.3 Our Core Values

- Academic excellence through innovation and teamwork
- Professionalism, responsibility, and respect at all levels
- Transparent communications
- Celebrate and support one another
- Commitment to our diverse community

1.4 Strategic Plan

The 2020-2022 Strategic Plan outlines our dedicated focus to investing in our core foundations of Our Students, Our Employees, Our Future and Our Community over the next two school years, especially considering what our school community has been through with the recent pandemic. This new strategic plan and new core values will continue to ensure we have an exemplary student-focused school system that develops lifelong learners to be globally competitive. URL: https://www.manateeschools.net/strategicplan

1.5 Our Technology Vision

Meet the changing needs of students by implementing universal technology solutions across multiple platforms through automation, innovation, and integration while empowering staff to equitably support curriculum and instruction in every school.

1.6 Student Progression Plan

The School Board has the authority to adopt rules for implementing the student progression requirements for students in grades kindergarten through 12. The Student Progression Plan for Manatee County defines the criteria for graduation, participation in graduation, promotion, intensive remediation, course offerings, evaluating student performance, and reporting to students and parents. The Student Progression Plan for Manatee County has been developed based on Florida Statutes and current and local needs.

Changes may be made to the School District of Manatee County Student Progression Plan at any time pending new legislation or interpretation of legislation from the Florida Department of Education. URL: https://www.manateeschools.net/Page/8756

SECTION 2

DISTRICT PROFILE

Manatee County Facts:

- Located on the west-central coast of the state of Florida, with the central administrative operations located in Bradenton.
- Bradenton is the largest city in Manatee County and is the county seat, located between the Tampa/St. Petersburg area and Sarasota, Florida.
- Incorporates 893 square miles (743 sq mi = Land, 150 sq mi = Water) with 385,571 residents.
- 2020 estimated population is 413,665 with a growth rate of 2.33%

The local economy is based on five main economic factors:

- retirement
- government
- farming
- tourism
- service industries

With our Gulf beaches and exceptional year-round climate, significant local revenues are generated by tourism and related service business. Farming of tomatoes, oranges and a variety of agricultural products remain a significant part of the county economy and accounts for a significant migrant farming population both in the community and the schools.

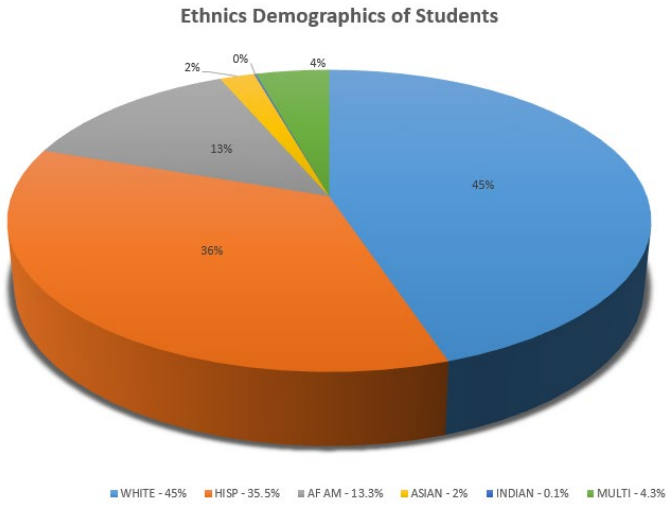
The service economy accounts for nearly 30 percent of the area's employment providing food service, maintenance, landscaping, banking, and retail operations.

Manatee County School District Facts:

- 31 - Elementary Schools*
- 8 - Middle Schools*
- 7 - High Schools*
- 2 - K-8 Schools
- 14 – Charter Schools
- 3 – Manatee Technical College Campuses

Student Facts:

The Manatee County School District currently focuses its educational efforts on over 50,000 VPK, K-12 and charter students.



- 63.9 % of the student population qualify for free and reduced lunch prices.
- Graduation rate = 83.2% (State Average = 86.9 %) - *18/19 Data*
- High School dropout rate = 6.8 % (State Average = 3.4 %) - *18/19 Data*
- Number of Homeless students is 422 - *20/21 Data*
- Student population has increased approximately 1.6 % over the past 5 years. - *20/21 Data*
- 21.1 % identified exceptional student education students (mentally, physically, emotionally handicapped, learning disabled and gifted) - *20/21 Data*

Average Class Size:

Grade PK-3	16.20
Grade 4-5	17.99
Grade 6-8	19.63
Grade 9-12	21.11

Staff Facts:

With over 6,000 full time employees, the School District is the largest employer in Manatee County.

Employee Group	**Employee Count**
Administrative	223
Board	5
Instructional	414
Support	2465
Teachers	2682

Above data as of 11-30-2020

Note: SDMC is among the highest starting salaries for teachers in Florida

SECTION 3

TECHNOLOGY NEEDS, STANDARDS, & COMMITTEES

3.1 Process for Determining Needs

The Office of the Chief Technology Officer (CTO) leads the development of the long-range technology plans for the entire District. The new strategic planning process is aligning department efforts with overall District objectives and goals approved by the School Board.

The Information Technology Division reviews and recommends for SDMC Board approval the maintenance and ongoing support of existing and new technologies and integrations in SDMC.

Additionally, the Information Technology Division, reviews, approves, and provides recommendations for SDMC approval for all technology infrastructure, end point devices, and software integrations, and implementations.

Six main component areas are targeted annually to determine needs for all schools:

1. Student Performance Outcomes
2. Digital Learning and Technology Infrastructure
3. Professional Development
4. Digital Tools
5. Online Assessment Support
6. Committees and Focus Groups

3.2 Training

The Professional Learning department conducts a yearly online training needs assessment that includes a section for technology training. The results from the survey guide priority technology training in the following year.

3.3 Florida DOE Technology Resource Inventory

The District continues to participate and provides annual updated data through the use of the Technology Resources Inventory (TRI). The Bureau of Educational Technology utilizes the Technology Resources Inventory maintained by the Florida Center for Interactive Media (FCIM) to provide District's and schools with the necessary data to effectively integrate technology into school curricula and instructional strategies.

The results of these inventories are reported online to assist with technology planning and implementation in schools and District's throughout Florida. SDMC will continue to leverage this tool as an important tool for determining needs for all schools.

The Information Technology Division will complete an annual technology needs assessment walk through for all SDMC schools. The Technology needs assessment will be scheduled with each school leadership team.

3.4 Florida DOE Technology Specifications for Online Assessment

Florida Department of Education provides a minimum set of technology requirements for student computers and bandwidth requirements for students. SDMC will utilize these minimum standards as a benchmark for computer purchases and future network upgrades.

3.5 School Improvement Plans (SIP)/School Technology Plans and Advisory Councils

All schools prepare their own SIPs based upon an analysis of the available data. All SIPs are required to reflect the mission and objectives approved by the Board.

The **Continuous Improvement Management System (CIMS)** was developed by the Bureau of School Improvement (BSI) to help serve the needs of stakeholders across Florida. This site provides District and school teams an online platform for collaborative planning and problem solving. SDMC leverages this framework to update their SIP via https://www.floridacims.org/

3.6 English Speakers of Other Languages (ESOL)

ESOL student plans are updated yearly in Project ELL. This program communicates with FOCUS to ensure that the FTE codes and testing data from FOCUS are on the ELL plan. Each student plan is also required to be updated any time there is a schedule change for an English language learner. Teachers also have access to a student's ACCESS for ELLs 2.0 assessment data for each year a student has taken this state-wide assessment. This data allows school personnel to monitor a student's English language acquisition and plan appropriate instruction.

3.7 Exceptional Student Education (ESE)

Technology can be, and is, used in various ways to support the Exceptional Student Education program. An Individual Education Plan (IEP) is provided through the state provided system – PEER that can be accessed at both the school and District level by appropriate personnel.

This will enable teachers and administrators to monitor and assess the ESE student's progress, prevent lapses in services, and provide up-to-date information in the Student Information System.

3.8 Governance Committees and FOCUS Groups

1. Superintendents Principal Advisory Group
2. Superintendents Leadership Team
3. Superintendents internal and external working groups
4. School Advisory Councils
5. Cabinet
6. Operations Leadership Team
7. Technology and Curriculum Working Group
8. Business System Governance Committee
9. Business System Executive Governance Committee
10. Technology and Innovation Team – Strategic Planning Committee
11. Information Technology Leadership Team (ITL)
12. IT Security Committee

3.9 Classroom Technology Standards - Hardware

Priority	Technology Item
1	Teacher/Admin - District standard laptop (Windows Based OS) that is designed to meet District access to Student Information System, Business Information System, Learning Management System, digital instruction, and other District approved systems. 4 Year Refresh Lease.
1	Student - Standard classroom mobile device is a Chromebook.
1	Wall Mounted – Center of Room - Digital Display panel 65-75" or Interactive Panel – Samsung/Promethean – (Cart mounted – Portable or Brick/Mortar room that does not support wall mounted install)
1	Samsung Tablet – Samsung Schools Only (Teacher)
1	Samsung Signage Player Box/TV Tuner (75" Interactive Samsung Only)
1	IPTV available at all schools and must use WIRED Ethernet connection
1	Promethean Interactive Digital Display (Nickel/Titanium).
1	Wireless Keyboard/Mouse Combo for Promethean Display
1	New Wired Computer labs homerun to IDF (No MINI SWITCHES) as needed to support curriculum and instruction
1	1:1 Wireless Access Point Per Academic Classroom (including portables)
2	Students Bring their own Device (BYOD). Students must follow each school's individual procedure on BYOD use
2	Provide schools with option to purchase District standard student Windows OS laptop/desktop based on curriculum requirements
	OPTIONAL EQUIPMENT
3	ScreenBeam 1100 Wireless Display Receiver
3	Samsung Soundbar District Standard
3	Promethean Soundbar
3	Belkin Tablet Stage (Samsung Schools) or Portable Projector Stage/Photo Studio Mount
3	HoverCam Solo 8 Plus – Promethean (Elementary Schools)
3	IPADS, Digital Readers
3	Printer – Centralized MFDs, Network Printers and Print Shop
3	District Standard HP Mini Mounted
3	Anywhere Cart – 30/36
3	iTeach Mobile Power Tower

SECTION 4

INFRASTRUCTURE, PERFORMANCE, AND SECURITY

4.1 Data Network

4.1.1 All schools in the District are networked. Schools with multiple buildings or multiple communication closets within the same building communicate with each other using 10Gbps fiber uplinks.

4.1.2 All workstation switch ports are 10/100/1000 Mbps. Every space occupied by staff has at least one data drop outlet with two or more Ethernet ports wired with Cat 5E cables at a minimum.

4.1.3 Classrooms have a minimum of two data outlets.

4.1.4 Computer labs are generally wired with one data drop for each computer in the lab.

4.1.5 Portables are connected to the main buildings with fiber optic cables and equipped with 1Gbps uplinks and have 10/100/1000 Mbps switched twisted pair switches.

4.1.6 Wireless network coverage is necessary for the effective deployment and use of wireless laptop computers. The District has achieved a 1:1 wireless access point ratio for all academic classrooms.

4.1.7 Fifty-two (52) District sites with 10 Gbps fiber connections terminating into two data centers with independent Internet circuits.

4.1.8 All 52 sites have 12 strands of fiber in and 12 strands of fiber out on four (4) independent District owned fiber rings and on single spoke and hub ring.

4.1.9 Forty-four (44) of these sites are connected bi-directionally in four (4) separate fiber rings, each site containing twenty-four (24) strands of dark fiber.

4.1.10 Eight (8) sites are connected with a single 10 gigabit connection to the SSC. These (8) sites also have a 1 GB single connection to the MCPSC. These eight sites have a 2 Gbps Telcom back-haul circuit for emergency failover in the event of a fiber cut.

4.1.11 Four (4) administrative sites are also connected to the SSC via dual 10 gigabit fiber rings. All (4) sites connect to both data centers. The entire SDMC fiber optic system is subterranean, owned, and maintained by SDMC.

4.1.12 Three (3) school sites are connected via Telcom 500 Mbps fiber connections. One (1) school site is connected via Telcom 1000 Mbps fiber connection and one (1) school site is connected via Telcom 100 Mbps fiber connection.

4.1.13 Internet content filtering is implemented for all users using a cloud based hosted solution. All Internet access is directed through the firewall without exception and is policy / role based.

4.2 Infrastructure and Services

The School Board approved an infrastructure upgrade on February 11, 2020 for INTERNET Services and Leased LIT Fiber Not to Exceed $2,782,560.00 that includes (2) 10 GB INTERNET Circuits and a fully managed Layer 3 Service including a bundled security package posturing SDMC for the next 5 years with (2) 12 month renewal options that could result in a maximum of 84 months of continued uninterruptable service.

A significant portion of this annual cost will be funded through E-RATE.

The District's centralized server infrastructure (physical/virtual) and INTERNET services are located at the District's School Support Center (SSC) building and Manatee County's Public Safety Center (MCPSC).

The District uses Microsoft Office 365 (O365) for email services and Office applications. O365 provides seats for all District staff, students, contracted sites and Charter Schools. The service is cloud hosted for redundancy.

4.3 Telephone and Intercom

Every classroom is equipped with a digital telephone and access to the Bogen PA system. A three -year plan to replace the legacy telephone infrastructure started in 2019-2020. This plan includes new Internet Protocol (IP) based handset devices in every classroom and office locations. See 6.4 for the implementation schedule.

4.4 Technology Security Protection Measures

The District's INTERNET connections are secured with an enterprise level firewall system and services that is monitored 24X7X365. Additionally, integrated intrusion detection and prevention systems to reduce exposure to threats and a host of additional services that provides a comprehensive suite of unified threat management features that meet the unique security requirements of SDMC.

Email Protection:

Emails are hosted on our Microsoft Office 365 tenant in the cloud. We have enabled anti-spam and other security components that also include data loss prevention for confidential information and sharing restrictions outside of our environment.

With the assistance of Microsoft's email filtering we block several spam messages from reaching our SDMC email boxes and we also have security and compliance measures in place to archive and preserve email history to meet required retention periods.

The list of other Microsoft advanced threat protections that are enabled are:

- Anti-Phishing: Protects our users from phishing attacks (i.e. impersonation and spoofing) and use safety tips to warn users about potentially harmful messages.

- Safe Attachments: Protects SDMC from malicious content in email attachments.

- Safe Links: Protects SDMC users from opening and sharing malicious links in email messages and Office desktop applications.

- Anti-Malware: Protects SDMC email from malware, including what actions to take and who to notify if malware is detected.

4.5 Instructional Television Network (MSTV)

The District has an educational television channel, Manatee Schools Television (MSTV). The mission of Manatee Schools Television is to produce and broadcast television programs supporting the vision of the School District of Manatee County and the educational needs of our students, staff, and community. MSTV broadcasts to the community over both Spectrum and Frontier cable television networks. Programming is also available on Vimeo, Roku and Apple TV devices as well as online twenty-four hours a day, seven days a week.

The District television station, MSTV, provides production equipment and professional level studios for District productions.

SECTION 5

TECHNOLOGY GOALS AND STRATEGIES

Goal 1: Maintain a technology refresh plan that provides equitable, sustainable, and relevant technology resources to all students and staff.

Strategies:

- Ensure a sustainable District wide Computer Refresh Plan is provided to all schools annually.
- Enhance and upgrade technology in four schools annually to provide an innovative Media Center experience for all students.
- Install Classroom Professional Displays and Tablets in all (Middle/High) schools by August 2020.
- Replace 10,000 Legacy student devices with Chromebooks by December 2020.
- Install Classroom Professional Displays in Elementary Schools by June 2022.
- Implement and maintain a sustainable digital device platform to address the instructional needs of all students.

Goal 2: Implement and sustain a modernized communication system infrastructure for all schools.

Strategies:

- Implement a Centralized Staff and Student ID Badging application for safety, security, transportation, food service, attendance, and library resources by July 2020.
- Replace legacy telephony system in all schools with Voice Over Internet Protocol (VoIP) by June 2023.
- Upgrade Public Address/Intercom Infrastructure in all schools by June 2023.
- Install Digital Marquee Outdoor Signage at select schools by June 2023.
- Integrate early warning campus-wide alert and emergency response systems that are compliant with legislative requirements and integrate with existing crisis communication systems.

Goal 3: Delivering powerful business intelligence dashboards for rapid and secure student data reporting.

Strategies:

- Implement a Data Warehouse & Reporting Dashboard Application.
  - Phase I – August 2020
  - Phase II - August 2022

Goal 4: Improve the productivity of all staff by providing cost efficient and innovative technology solutions.

Strategies:

- Provide seamless access to applications through MySDMC Single Sign-On (SSO) ClassLink APP.
- Deploy a parent/guardian mobile app that will provide an easy way to track their child's education experience by August 2020.
- Implement Intranet for all staff to collaborate, manage documentation and access internal employee resources by August 2021.
- Implement an online transcript, records, and document processing portal by June 2021.
- Digitize active and inactive student and staff records to a central document repository by June 2023.

Goal 5: Provide a safe, secure, consistent, and seamless connectivity experience to all users supporting the educational goals of all schools.

Strategies:

- 1:1 Wireless Access Points in every academic classroom by June 2020.
- Increase Internet capacity to 10GB by August 2020.
- Implement MySDMC Single Sign-On (SSO) parent portal to provide a seamless experience to resources provided by the school District.
- Complete the Fiber Infrastructure Expansion to Barbara Harvey Elementary School, Parrish Community High School and Williams Elementary School by June 2022.
- Upgrade eligible schools network infrastructure to ensure schools are connected to information and resources by June 2023.
- Evaluate on premise enterprise applications and systems for cloud readiness annually.
- Continue to expand and upgrade infrastructure to support eLearning opportunities for students.
- Evaluate and complete cabling infrastructure retrofit projects at select schools to increase bandwidth and improve the user experience.

SECTION 6

INFORMATION TECHNOLOGY INFRASTRUCTURE, COMPUTER AND SERVER REFRESH PLANS

6.1 Classroom Digital Display Panel Upgrades

High School - Classroom Digital Display Panel Upgrades

School Name	Grade Levels	Status
Bayshore	All Academic Classrooms	Complete
Braden River	All Academic Classrooms	Complete
Lakewood Ranch	All Academic Classrooms	Complete
Manatee	All Academic Classrooms	Complete
Palmetto	All Academic Classrooms	Complete
Parrish Community	All Academic Classrooms	Complete
Southeast	All Academic Classrooms	Complete
Horizons	All Academic Classrooms	Complete

Middle School – Classroom Digital Display Panel Upgrades

School Name	Grade Levels	Status
Braden River	All Academic Classrooms	Complete
Buffalo Creek	All Academic Classrooms	Complete
Haile	All Academic Classrooms	Complete
Mona Jain	All Academic Classrooms	Complete
Johnson K-8	All Academic Classrooms	Complete
King	All Academic Classrooms	Complete
Lee	All Academic Classrooms	Complete
Lincoln Memorial	CORE Classrooms 6-8 (9)	In Progress
Nolan	All Academic Classrooms	Complete
Palm View K-8	All Academic Classrooms	Complete
Sugg	All Academic Classrooms	Complete

Elementary - Classroom Digital Display Panel Upgrades

Fiscal Year	School Name	Grade Levels	Status
19/20	Harvey	All Academic Classrooms	Completed
20/21	Anna Maria	2-5 (Art/Music)	In Progress
		K-1	
20/21	Braden River El	2-5 (Art/Music)	In Progress
22/23		K-1 (9)	
20/21	Kinnan	2-5 (Art/Music)	In Progress
22/23		K-1 (9)	
20/21	Manatee El	2-5 (Art/Music)	In Progress
22/23		K-1 (8)	
20/21	McNeal	2-5 (Art/Music)	Complete
22/23		K-1 (10)	
20/21	Miller	2-5 (Art/Music)	In Progress
22/23		K-1 (10)	
20/21	Mills	2-5 (Art/Music)	In Progress
22/23		K-1 (12)	
20/21	Myakka	2-5 (Art/Music)	In Progress
22/23		K-1 (6)	
20/21	Palma Sola	2-5 (Art/Music)	In Progress
22/23		K-1 (8)	
20/21	Palmetto El	2-5 (Art/Music)	Complete
22/23		K-1 (10)	
20/21	Palm View	2-5 (Art/Music)	Complete
22/23		K-1 (7)	
20/21	Prine	2-5 (Art/Music)	In Progress
22/23		K-1 (11)	
20/21	Rogers Garden	2-5 (Art/Music)	In Progress
22/23		K-1 (8)	
20/21	Samoset	2-5 (Art/Music)	In Progress
		K-1 (9)	
20/21	Tillman	2-5 (Art/Music)	In Progress
22/23		K-1 (11)	
20/21	Willis	2-5 (Art/Music)	Complete
22/23		K-1 (12)	
21/22	Abel	2-5 (Art/Music) (18)	Tentatively Scheduled/Evaluation for Refresh
22/23		K-1 (8)	

21/22	Ballard	2-5 (Art/Music) (16)	Tentatively Scheduled/Evaluation for Refresh
22/23		K-1 (7)	
21/22	Bayshore	2-5 (Art/Music) (25)	Tentatively Scheduled/Evaluation for Refresh
22/23		K-1 (11)	
21/22	Daughtrey	2-5 (Art/Music) (28)	Tentatively Scheduled/Evaluation for Refresh
22/23		K-1 (12)	
21/22	Freedom	2-5 (Art/Music) (21)	Tentatively Scheduled/Evaluation for Refresh
22/23		K-1 (8)	
21/22	Gullett	2-5 (Art/Music) (39)	Tentatively Scheduled/Evaluation for Refresh
22/23		K-1 (18)	
21/22	Moody	2-5 (Art/Music) (21)	Tentatively Scheduled/Evaluation for Refresh
22/23		K-1 (9)	
21/22	Sea Breeze	2-5 (Art/Music) (18)	Tentatively Scheduled/Evaluation for Refresh
22/23		K-1 (10)	
21/22	Stewart	2-5 (Art/Music) (15)	Tentatively Scheduled/Evaluation for Refresh
22/23		K-1 (8)	
21/22	Williams	2-5 (Art/Music) (25)	Tentatively Scheduled/Evaluation for Refresh
22/23		K-1 (12)	
21/22	Witt	All Academic Classrooms	New Construction
22/23	Blackburn	2-5 (Art/Music) (17)	New Construction
		K-1 (8)	
22/23	Oneco	2-5 (Art/Music) (19)	New Construction
		K-1 (9)	
22/23	Tara	2-5 (Art/Music) (22)	New Construction
		K-1 (10)	

6.2 Media Centers – Renovation, Furniture, and Technology Upgrades

Fiscal Year	School Name	Status
2016-2018	Bashaw Elementary	Completed
	Bayshore High	Completed
	Daughtrey Elementary	Completed
	Freedom Elementary	Completed
	Gullett Elementary	Completed
	McNeal Elementary	Completed
	Southeast High	Completed
	Johnson K-8 (NC)	Completed
2018-2019	Lee Middle	Completed
	Mills Elementary	Completed
	Prine Elementary	Completed
	Tara Elementary	Completed
2019-2020	Barbara Harvey (NC)	Completed
	Braden River Elementary	Completed
	Manatee High	Completed
	Mona Jain Middle (NC)	Completed
	Parrish Community High (NC)	Completed
	Seabreeze Elementary	Completed
	Sugg Middle	Completed
2020-2021	Palmetto High	Completed
	Palm View School K-8	In Progress
	Samoset Elementary	Completed
	Willis Elementary	Completed
2021-2022	Braden River High	Tentatively Scheduled for refresh
	Braden River Middle	New Construction
	Buffalo Creek Middle	New Construction
	Nolan Middle	Tentatively Scheduled for refresh
	Manatee Elementary	Tentatively Scheduled for refresh
	Myakka Elementary	Tentatively Scheduled for refresh
	Witt Elementary	New Construction

2022-2023	Abel Elementary	Tentatively Scheduled for refresh
	Haile Middle	New Construction
	King Middle	Tentatively Scheduled for refresh
	Lakewood Ranch High	Tentatively Scheduled for refresh
	Miller Elementary	Tentatively Scheduled for refresh
	Tillman Elementary	Tentatively Scheduled for refresh
2023-2024	Anna Maria Elementary	Tentatively Scheduled for refresh
	Ballard Elementary	Tentatively Scheduled for refresh
	Bayshore Elementary	Tentatively Scheduled for refresh
	Rogers Garden Elementary	Tentatively Scheduled for refresh
	Williams Elementary	Tentatively Scheduled for refresh
2024-2025	Kinnan Elementary	Tentatively Scheduled for refresh
	Moody Elementary	Tentatively Scheduled for refresh
	Palmetto Elementary	Tentatively Scheduled for refresh
	Stewart Elementary	Tentatively Scheduled for refresh
	Lincoln Memorial	Tentatively Scheduled – If identified as a Traditional District School

Blackburn, Oneco, Palma Sola (Future - New Construction) (NC)

Note:

- Elementary Schools estimated furniture and technology expenditures 45K – 85K.
- Middle Schools estimated furniture and technology expenditures 50K – 75K
- High Schools estimated furniture and technology expenditures 60K – 105K

6.3 Cafeteria Digital Panel Upgrades

High School Cafeteria Digital Panel Upgrades

Fiscal Year	School Name	# Digital Panels	Status
2020-2022	Bayshore	4	Planning
2020-2022	Braden River	4	Planning
2020-2022	Lakewood Ranch	4	Planning
2020-2022	Manatee	4	Planning
2020-2022	Palmetto	4	Planning
2019-2020	Parrish Community	2	Planning
2020-2022	Southeast	3	Planning
2020-2022	Horizons	4	Planning

Middle School – Cafeteria Digital Display Panel Upgrades

Fiscal Year	School Name	# Digital Panels	Status
2020-2022	Braden River	4	Planning
2020-2022	Buffalo Creek	4	Planning
2020-2023	Haile	4	New Construction
2019-2020	Mona Jain	8	Complete
2019-2020	Johnson K-8	2	Planning
2020-2022	King	4	Planning
2020-2022	Lee	4	Planning
2020-2022	Lincoln Memorial	4	Planning
2020-2022	Nolan	2	Planning
2020-2022	Palm View K-8	4	Planning
2020-2022	Sugg	4	New Construction

Elementary Cafeteria Digital Panel Upgrades

Fiscal Year	School Name	# Digital Panels	Status
2022-2025	Abel	4	Planning
2022-2025	Anna Maria	4	Planning
2022-2025	Ballard	4	Planning
2022-2025	Bashaw	4	Planning
2022-2025	Bayshore	4	Planning
2022-2025	Blackburn	4	Planning
2022-2025	Braden River	4	Planning
2022-2025	Daughtrey	4	Planning
2022-2025	Freedom	4	Planning
2022-2025	Gullett	4	Planning
2022-2025	Harvey	2	Planning
2022-2025	Kinnan	4	Planning
2022-2025	Manatee	4	Planning
2022-2025	McNeal	4	Planning
2022-2025	Miller	4	Planning
2022-2025	Mills	4	Planning
2022-2025	Moody	4	Planning
2022-2025	Myakka	4	Planning
2022-2025	Oneco	4	New Construction
2022-2025	Palma Sola	4	New Construction
2022-2025	Palmetto	4	Planning
2022-2025	Prine	4	Planning
2022-2025	Rogers Garden/Bullock	4	Planning
2022-2025	Samoset	4	Planning
2022-2025	Sea Breeze	4	Planning
2022-2025	Stewart	4	Planning
2022-2025	Tara	4	New Construction
2022-2025	Tillman	4	Planning
2022-2025	Williams	4	Planning
2022-2025	Willis	4	Planning
2022-2025	Witt	4	New Construction

6.4 Crisis Communication System Upgrades

VoIP Tele & PA Systems FY 20/21	INSTALL DATE
SCHOOL SUPPORT CENTER	Completed
PROFESSIONAL SUPPORT CENTER	Completed
MATZKE SUPPORT CENTER	Completed
WAKELAND SUPPORT CENTER	Completed
OFFICE OF STUDENT ASSIGNMENT	Completed
MANATEE HIGH SCHOOL	Completed
TARA ELEMENTARY SCHOOL	Completed
TILLMAN ELEMENTARY	Completed
BASHAW ELEMENTARY	Completed
BAYSHORE ELEMNTARY	Completed
MANATEE ELEMENTARY	Completed
BRADEN RIVER ELEMENTARY	Completed
PALMETTO HIGH	Completed
WITT ELEMENTARY	Completed
BRADEN RIVER MIDDLE	Completed
KING MIDDLE	Completed
SAMOSET ELEMENTARY	Completed
BRADEN RIVER HIGH	Completed
WILLIS ELEMENTARY	Completed
HORIZONS ACADEMY	Completed
MILLER ELEMENTARY	20-Dec
ABEL ELEMENTARY	21-Jan
BLACKBURN ELEMENTARY	21-Jan
MCNEAL ELEMENTARY	21-Feb
MYAKKA CITY ELEMENTARY	21-Feb
STEWART ELEMENTARY	21-Mar
SEA BREEZE ELEMENTARY	21-Mar

VoIP Tele & PA Systems FY 21/22	INSTALL DATE
HAILE MIDDLE	21-Apr
LEE MIDDLE	21-Apr
HARLLEE SPEC. PRGRMS	21-May
DAUGHTREY ELEMENTARY	21-May
FREEDOM ELEMENTARY	21-Jun
GULLETT ELEMENTARY	21-Sep
MOODY ELEMENTARY	21-Sep
ONECO ELEMENTARY	21-Oct
PALMETTO ELEMENTARY	21-Oct
PRINE ELEMENTARY	21-Nov
BUFFALO CREEK MIDDLE	21-Nov
NOLAN MIDDLE	21-Dec
ANNA MARIA ELEMENTARY	21-Dec
SOUTHEAST HIGH	22-Jan
BALLARD ELEMENTARY	22-Jan
KINNAN ELEMENTARY	22-Feb
MILLS ELEMENTARY	22-Feb
PALM VIEW ELEMENTARY	22-Mar
PALMA SOLA ELEMENTARY	22-Mar
ROGERS GARDEN ELEMENTARY	22-Apr
JOHNSON MIDDLE/WAKELAND E.S.	22-Apr
BAYSHORE HIGH / MTC WEST	22-May
LAKEWOOD RANCH HIGH	22-May
LINCOLN MEMORIAL ACADEMY / OSA	22-Jun
MTC MAIN	22-Jun
MTC EAST	22-Jul
SUGG MIDDLE SCHOOL	22-Jul

6.5 E-RATE Category 2

2021-2022 Funding Year 24	School Name	# of Switch Devices	Historical Install Date	# of Access Points	Historical Install Date	Projected Install Date	Estimated Cost (No Discount)	Est. ERATE Network Upgrade Cost
Phase 0	All - Based on Model	N/A	N/A	2100	2015-2016	2021-2022	$1,260,000	$252,000.00
Phase 0	All - Based on Model - Maintenance/License	N/A	N/A	1500	2018-2019	2021-2022	$75,000.00	$15,000.00
2022-2023 - Funding Year 25	**School Name**	**# of Switch Devices**	**Historical Install Date**	**# of Access Points**	**Historical Install Date**	**Projected Install Date**	**Estimated Cost (No Discount)**	**Est. ERATE Network Upgrade Cost**
Phase 1	BAYSHORE HIGH	21	2015-2016	N/A	N/A	2022-2023	$109,710.00	$21,942.00
Phase 1	BRADEN RIVER HIGH	12	2015-2016	N/A	N/A	2022-2023	$116,310.00	$23,262.00
Phase 1	LAKEWOOD RANCH HIGH	21	2015-2016	N/A	N/A	2022-2023	$288,160.00	$57,63200
Phase 1	MANATEE HIGH	24	2015-2016	N/A	N/A	2022-2023	$141,360.00	$28,272.00
Phase 1	PALMETTO HIGH	22	2015-2016	N/A	N/A	2022-2023	$156,760.00	$31352.00
Phase 1	SOUTHEAST HIGH	26	2015-2016	N/A	N/A	2022-2023	$140,210.00	$28,04200
Phase 1	BRADEN RIVER MIDDLE	11	2015-2016	N/A	N/A	2022-2023	$74,860.00	$14,972.00
Phase 1	BUFFALO CREEK MIDDLE	6	2015-2016	N/A	N/A	2022-2023	$71,010.00	$14,202.00
Phase 1	HAILE MIDDLE	11	2015-2016	N/A	N/A	2022-2023	$81,010.00	$16,202.00
Phase 1	JOHNSON MIDDLE	10	2015-2016	N/A	N/A	2022-2023	$61,260.00	$12,252.00
Phase 1	KING MIDDLE	9	2015-2016	N/A	N/A	2022-2023	$74,210.00	$14,842.00
Phase 1	LEE MIDDLE	7	2015-2016	N/A	N/A	2022-2023	$51,160.00	$10,232.00
Phase 1	LINCOLN MEMORIAL ACADEMY	15	2015-2016	N/A	N/A	2022-2023	$76,470.00	$15,294.00

Phase 1	NOLAN MIDDLE	7	2015-2016	N/A	N/A	2022-2023	$68,210.00	$13,642.00
Phase 1	SUGG MIDDLE	5	2015-2016	N/A	N/A	2022-2023	$90.510.00	$18,102.00
2023-2024 - Funding Year 26	**School Name**	**# of Switch Devices**	**Historical Install Date**	**# of Access Points**	**Historical Install Date**	**Projected Install Date**	**Estimated Cost (No Discount)**	**Est. ERATE Network Upgrade Cost**
Phase 2	ABEL ELEMENTARY	5	2015-2016	N/A	N/A	2023-2024	$27,110.00	$5,422.00
Phase 2	ANNA MARIA ELEMENTARY	3	2015-2016	N/A	N/A	2023-2024	$17,110.00	$3,422.00
Phase 2	BASHAW ELEMENTARY	6	2015-2016	N/A	N/A	2023-2024	$41,210.00	$8,24200
Phase 2	BLACKBURN ELEMENTARY	7	2015-2016	N/A	N/A	2023-2024	$55,860.00	$11,172.00
Phase 2	BRADEN RIVER ELEMENTARY	7	2015-2016	N/A	N/A	2023-2024	$50,660.00	$10,132.00
Phase 2	FREEDOM ELEMENTARY	9	2015-2016	N/A	N/A	2023-2024	$66,060.00	$13,212.00
Phase 2	GULLETT ELEMENTARY	6	2015-2016	N/A	N/A	2023-2024	$79,860.00	$15,972.00
Phase 2	KINNAN ELEMENTARY	8	2015-2016	N/A	N/A	2023-2024	$49,060.00	$9,812.00
Phase 2	MILLS ELEMENTARY	7	2015-2016	N/A	N/A	2023-2024	$60,860.00	$12,172.00
Phase 2	PALMA SOLA ELEMENTARY	14	2015-2016	N/A	N/A	2023-2024	$73,260.00	$14,652.00
Phase 2	SEA BREEZE ELEMENTARY	6	2015-2016	N/A	N/A	2023-2024	$36,610.00	$7,322.00
Phase 2	STEWART ELEMENTARY	3	2015-2016	N/A	N/A	2023-2024	$25,010.00	$5,002.00
Phase 2	TARA ELEMENTARY	8	2015-2016	N/A	N/A	2023-2024	$44,100.00	$8,820.00
Phase 2	WILLIAMS ELEMENTARY	4	2015-2016	N/A	N/A	2023-2024	$45,110.00	$9,022.00
Phase 2	WILLIS ELEMENTARY	6	2015-2016	N/A	N/A	2023-2024	$61,160.00	$12,232.00

Phase 2	WITT ELEMENTARY	6	2015-2016	N/A	N/A	2023-2024	$71,300.00	$14,260.00
2024-2025 - Funding Year 27	**School Name**	**# of Switch Devices**	**Historical Install Date**	**# of Access Points**	**Historical Install Date**	**Projected Install Date**	**Estimated Cost (No Discount)**	**Est. ERATE Network Upgrade Cost**
Phase 3	BALLARD ELEMENTARY	3	2017-2018	N/A	N/A	2024-2025	$31,210.00	$6,24200
Phase 3	BAYSHORE ELEMENTARY	4	2017-2018	N/A	N/A	2024-2025	$45,360.00	$9,07200
Phase 3	DAUGHTREY ELEMENTARY	5	2017-2018	N/A	N/A	2024-2025	$47,110.00	$9,42200
Phase 3	MANATEE ELEMENTARY	6	2017-2018	N/A	N/A	2024-2025	$40,810.00	$8,16200
Phase 3	MCNEAL ELEM	6	2016-2017	N/A	N/A	2024-2025	$55,860.00	$11,17200
Phase 3	MILLER ELEMENTARY	4	2015-2016	N/A	N/A	2024-2025	$39,810.00	$7,96200
Phase 3	MOODY ELEMENTARY	5	2017-2018	N/A	N/A	2024-2025	$40,060.00	$8,01200
Phase 3	MYAKKA CITY ELEMENTARY	7	2016-2017	N/A	N/A	2024-2025	$53,910.00	$10,78200
Phase 3	ONECO ELEMENTARY	8	2017-2018	N/A	N/A	2024-2025	$47,660.00	$9,53200
Phase 3	PALM VIEW ELEMENTARY	9	2015-2016	N/A	N/A	2024-2025	$58,800.00	$11,76000
Phase 3	PALMETTO ELEMENTARY	11	2015-2016	N/A	N/A	2024-2025	$69,260.00	$13,85200
Phase 3	PRINE ELEMENTARY	5	2015-2016	N/A	N/A	2024-2025	$59,800.00	$11,96000
Phase 3	ROGERS GARDEN ELEMENTARY	5	2015-2016	N/A	N/A	2024-2025	$38,610.00	$7,72200
Phase 3	SAMOSET ELEMENTARY	5	2015-2016	N/A	N/A	2024-2025	$36,510.00	$7,302.00
Phase 3	TILLMAN ELEMENTARY	6	2015-2016	N/A	N/A	2024-2025	$50,610.00	$10,12200
Phase 3	HORIZONS ACADEMY	4	2016-2017	N/A	N/A	2024-2025	$40,310.00	$8,062.00

2024-2025 - Funding Year 27	School Name	# of Switch Devices	Historical Install Date	# of Access Points	Historical Install Date	Projected Install Date	Estimated Cost (No Discount)	Est. ERATE Network Upgrade Cost
Phase 3	All - Based on Model	N/A	N/A	1500	2018-2019	2024-2025	$900,000.00	$180,000.00
	All - Based on Model - Maintenance/License	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2025-2026 - Funding Year 28	**School Name**	**# of Switch Devices**	**Historical Install Date**	**# of Access Points**	**Historical Install Date**	**Projected Install Date**	**Estimated Cost (No Discount)**	**Est. ERATE Network Upgrade Cost**
Phase 4	MTC EAST	6	2018-2019	48	2016-2017	2025-2026	$47,800	$9,560.00
Phase 4	MTC MAIN	11	2018-2019	79	2016-2017	2025-2026	$117,710.00	$23,422.00
Phase 4	BARBARA HARVEY ELEMENTARY	7	2019-2020	65	2019-2020	2025-2026	$92,260.00	$18,452.00
Phase 4	MONA JAIN MIDDLE	10	2019-2020	85	2019-2020	2025-2026	$90,510.00	$18,102.00
Phase 4	PARRISH COMMUNITY HIGH	24	2019-2020	121	2019-2020	2025-2026	$206,410.00	$41,282.00
Phase 4	HARLLEE MIDDLE	7	2020-2021	34	2015-2016	2025-2026	$46,260.00	$9,252.00
2026-2027	**District**	**# of Switch Devices**	**Historical Install Date**	**# of Access Points**	**Historical Install Date**	**Projected Install Date**	**Estimated Cost (No Discount)**	**Est. ERATE Network Upgrade Cost**
Phase 5	Matzke & Wakeland (NIF Upgrade)	11	2019-2020	51	2019-2020	2026-2027	$93,250.00	N/A
Phase 5	PSC (NIF Upgrade)	5	2019-2020	38	2019-2020	2026-2027	$69,150.00	N/A
Phase 5	SSC (NIF Upgrade)	5	2019-2020	15	2019-2020	2026-2027	$52,250.00	N/A

6.6 Server Infrastructure Refresh Plan

Fiscal Year	Data Center Servers	Data Center Storage	Historical Install Date	School Servers	Estimated Cost
2020 - 2021	Maintenance/Warranty/Part Harvest	Maintenance/Warranty/Part Harvest	2013, 2015-2018	Server Consolidation Plan	$40,000.00
2021-2022	Maintenance/Warranty/Part Harvest	Maintenance/Warranty/Part Harvest	2013, 2015-2018	Server Consolidation Plan	$0.00
2022-2023	Maintenance/Warranty/Part Harvest	Maintenance/Warranty/Part Harvest	2013, 2015-2018	$0.00	$0.00
2023-2024	Purchase Enclosure/Blade Server Refresh	Storage Solution/Hyperconverged Infrastructure	2013, 2015-2018	$0.00	$1,100,000.00
2024-2025	Maintenance/Warranty/Part Harvest	Maintenance/Warranty/Part Harvest	2013, 2015-2018	TBD	TBD

6.7 High School Sports Fields Sound System Upgrades

Baseball	Softball	Football/Soccer
2020-2021		
Lakewood Ranch	Braden River	See Historical Installation Date Below
Southeast	Lakewood Ranch	See Historical Installation Date Below
	Southeast	See Historical Installation Date Below
2021-2022		
Bayshore	Bayshore	See Historical Installation Date Below
Palmetto	See Historical Installation Date Below	See Historical Installation Date Below
2022-2023		
Braden River	See Historical Installation Date Below	See Historical Installation Date Below
2023-2024		
See Historical Installation Date Below	See Historical Installation Date Below	Bayshore – Planned Evaluation
2024-2025		
See Historical Installation Date Below	See Historical Installation Date Below	Braden River - Planned Evaluation

Historical Installation Dates – High School Sports Fields Sound System Upgrades

Baseball	Softball	Football/Soccer
Manatee – G.T. Bray Public Park	Manatee – G.T. Bray Public Park	Bayshore - 2017
Parrish Community – 2019	Palmetto – Blackstone Public Park	Braden River - 2018
	Parrish Community - 2019	Lakewood Ranch - 2018
		Manatee – (Athletic Boosters)
		Palmetto - 2019
		Parrish Community - 2019

6.8 School - Instructional/Administrator 4-Year Laptop Lease Refresh

Group 1: 2020-2021 - Board Approved April 2020 (Annual Lease Payment $189,140.30)				
Anna Maria Elementary	Ballard Elementary	Braden River Elementary	Braden River Middle	Horizons Academy
Lee Middle	Manatee Elementary	Myakka Elementary	Palma Sola Elementary	Palmetto High
Palmetto Elementary	Palm View Elementary	Sea Breeze Elementary	Stewart Elementary	Sugg Middle
Tillman Elementary				
Group 2: 2021-2022 – Projected Board Approval Spring 2021 (Estimated Lease Payment $360,000.00)				
Bayshore Elementary	Blackburn Elementary	Buffalo Creek Middle	Daughtrey Elementary	Gullett Elementary
Johnson K-8	King Middle	Kinnan Elementary	Lakewood Ranch High	McNeal Elementary
Miller Elementary	Mills Elementary	Moody Elementary	Nolan Middle	Oneco Elementary
Prine Elementary	Rogers Garden	Samoset Elementary	Tara Elementary	Willis Elementary
Witt Elementary				
Group 3: 2024-2025 – Projected Board Approval Spring 2024 (Estimated Lease Payment $519,300.00)				
Abel Elementary	Barbara Harvey Elementary	Bashaw Elementary	Bayshore High	Braden River High
Freedom Elementary	Haile Middle	Manatee High	Dr. Mona Jain	Parrish Community High
Southeast High	Williams Elementary	Anna Maria Elementary	Ballard Elementary	Braden River Elementary
Braden River Middle	Horizons Academy	Lee Middle	Manatee Elementary	Myakka Elementary
Palma Sola Elementary	Palmetto High	Palmetto Elementary	Palm View School K-8	Sea Breeze Elementary
Stewart Elementary	Sugg Middle	Tillman Elementary		

6.9 School – Student – Estimated Chromebook Refresh

Model	Quantity	Service Years	Fiscal Year Refresh	Estimated Cost:	Google End of Life/OS Support
HP 11A G6 EE/Hp 11 A G8 EE	8000	2019-2023	2023-2024	$2,600,000.00	June 2026
HP 11A G6 EE/HP 11 A G8 EE	13,000	2020-2024	2024-2025	$4,225,000.00	June 2026
HP 11A G8 EE	12,000 (Lease-COVID-19)	2021-2025	2025-2026	$3,900,000.00	June 2026
HP 11 A G9 EE - 2/21	1369 + (TBD)	2021-2026	2026-2027	TBD	June 2029

6.10 Mobile Devices (Windows) – Estimated Refresh

Manufacturer	Model	Quantity	Fiscal Year - Purchase	Student/Staff	Replacement Device	Estimated Cost
2020-2021						
HP	EB 840/ Surface Pro	857	2015	Teacher	EB 745/EB 360 Touch	$189,140.30 Group 1 Lease
HP	ProBook 640 G1	139	2014	Staff	EB 745/845/Internal	$107,447.00
HP	ProBook 11 EE G1	1397	2015	Student	Chromebook	$454,025.00
2021-2022						
HP	EB 840 G2	1289	2016	Teacher/Staff	EB 845	See Group 2 Lease
HP	ProBook 11 EE G2	1560	2016	Student	Chromebook	$507,000.00
2022-2023						
HP	ProBook 11 EE G2	5477	2016	Student	Chromebook	$1,780,025.00
HP	ProBook X360 11 G1 EE	2406	2017	Student	Chromebook	$781,950.00
HP	ProBook 640 G2/G3	25	2017	Staff	EB 845/TBD	$19,325.00

2023-2024						
HP	ProBook X360 11 G2 EE	2356	2017	Student	Chromebook	$765,700.00
HP	EB 840 G3	569 (*325*)	2017	Staff/Teacher	EB 845/TBD	$251,225.00
HP	X360 1030 G2	291	2018	Staff/Admin	EB X360/TBD	$50,000.00 See Group Lease

Manufacturer	Model	Quantity	Fiscal Year - Purchase	Student/Staff	Replacement Device	Estimated Cost
2024-2025						
HP	EB 840 G4	667 (*211*)	2018	Teacher/Staff	EB 845/TBD	$163,525.00 See Group Lease
HP	ProBook X360 11 G4 EE	117	2019	Student	Chromebook	$38,025.00
HP	EB 745 G5/G6	2281	2019	Teacher/Staff	EB 845/TBD	TBD/See Group 3 Lease

6.11 Desktop Devices (Windows) – Estimated Refresh

Manufacturer	Model	Quantity	Fiscal Year - Purchase	Student/Staff	Replacement Device	Estimated Cost
2020-2021						
ACON1-Corp	ClassFlow/Display	381	2015	Teacher	HP Mini/Internal Refresh As Needed	$268,605.00
HP	600 G1 SFF	935	2015	Student/Staff	ED 705 G5 DM/CB/TBD	$659,175.00
2021-2022						
HP	800 G1 DM	791	2015	Student/Staff	ED 705 G5 DM/TBD	$557,655.00
HP	800 G1 SFF	86	2015	Student/Staff	Internal Refresh/TBD	$0.00

2022-2023						
HP	800 G2 DM	1520	2015	Student/Staff	ED 705 G5 DM/TBD	$1,071,600.00
2023-2024						
HP	800 G3 DM	2398	2017	Student/Staff	ED 705 G5 DM/TBD	$1,690,590.00
2024-2025						
HP	705 G4 DM	1537	2018	Student/Staff	ED 705 G5 DM/TBD	$1,083,585.00
2025-2026						
HP	800 G4 DM/MT	147	2018	Student/Staff	ED 705 G5 DM/TBD	$103,635.00
			2020 - 2025			Vocational/As Needed
HP	Z Series	376	2016-2020	Student	TBD/Internal	TBD

Total Future Estimated Device Cost Summary:

Device Type	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
Laptop (Lease-School)	$189,140.30	$549,140.30	$549,140.30	$549,140.30	$879,300.00	$879,300.00
Chromebook (Lease – 12,000 - Student)	$973,153.42	$973,153.42	$973,153.42	$973,153.42	$1.00 Buyout (Lease/Purchase)	TBD
Mobile Devices	TBD	$507,000.00	$2,581,300.00	$3,666,925.00	$4,426,307.00	$3,900,000.00
Desktops/Mini	TBD	$557,655.00	$1,071,600.00	$1,690,590.00	$1,083,585.00	$103,635.00
Total:	$1,162,293.72	$2,586,948.72	$5,175,193.72	$6,879,808.72	$6,389,193.00	$4,882,935.00

6.12 Television Production Studio, Field Equipment, and IPTV Distribution System

2019-2020				
Sugg Middle	Buffalo Creek Middle	Johnson K-8	Palm View K-8	Prine
Anna Maria Elementary	Myakka Elementary	Williams Elementary	Palma Sola Elementary	Miller Elementary
Kinnan Elementary	Sea Breeze Elementary	Palmetto Elementary	Ballard Elementary	Braden River Elementary
Manatee Elementary				
2020-2021				
Nolan Middle	Haile Middle	Lee Middle	Braden River Middle	McNeal Elementary
Tara Elementary	Stewart Elementary	Abel Elementary	Freedom Elementary	Bashaw Elementary

Samoset Elementary	Willis Elementary			
2021-2022				
King Middle	Oneco Elementary	Bayshore Elementary	MSTV Studio 1	MTC Studio
2022-2023				
Lakewood Ranch High	Manatee High	Mills Elementary	Tillman Elementary	Daughtrey Elementary
Moody Elementary				
2023-2024				
Parrish Community High	Mona Jain Middle	Witt Elementary	Blackburn Elementary	Gullett Elementary
Prine Elementary	Barbara Harvey Elementary			

6.13 Multi-Function Devices

Elementary School Multi-Function Devices

School	Model	Type	Device Count	End Date	Estimated Start Date	End Date	Estimated - New 5 Year Lease Total
Abel	MX-4070N	C	1	9/15/2021	3/1/2023	7/1/2023	$7,572.29
	MX-M565N	B/W	3	9/15/2021	3/1/2023	7/1/2023	$15,535.14
Anna Maria	MX-4070N	C	1	9/15/2021	3/1/2023	7/1/2023	$7,572.29
	MX-M565N	B/W	2	9/15/2021	3/1/2023	7/1/2023	$10,356.76
Ballard	MX-4070N	C	1	6/30/2021	3/1/2023	7/1/2023	$7,572.29
	MX-M365N	B/W	2	6/30/2021	3/1/2023	7/1/2023	$10,356.76
Bashaw	MX-4070N	C	1	6/30/2021	3/1/2023	7/1/2023	$7,572.29
	MX-M565N	B/W	3	6/30/2021	3/1/2023	7/1/2023	$15,534.87
	MX-M365N	B/W	1	6/30/2021	3/1/2023	7/1/2023	$5,178.29
Bayshore	MX-4071	C	1	N/A	3/1/2024	7/1/2024	$7,572.29
	MX-M565N	B/W	4	6/30/2021	3/1/2023	7/1/2023	$20,713.16
Blackburn	MX-4070N	C	1	2/7/2022	3/1/2023	7/1/2023	$7,572.29
	MX-M565N	B/W	3	2/7/2022	3/1/2023	7/1/2023	$15,535.14
Braden River	MX-4070N	C	1	6/30/2021	3/1/2023	7/1/2023	$7,572.29
	MX-M565N	B/W	4	6/30/2021	3/1/2023	7/1/2023	$20,713.52
Daughtrey	MX-3070N	C	1	6/30/2021	3/1/2023	7/1/2023	$6,530.29
	MX-M365N	B/W	4	6/30/2021	7/1/2023	6/30/2028	$18,633.52
Freedom	MX-4070N	C	1	2/7/2022	7/1/2023	6/30/2028	$7,572.29

School	Model	Type	Device Count	End Date	Estimated Start Date	End Date	Estimated - New 5 Year Lease Total
	MX-M565N	B/W	3	2/7/2022	7/1/2023	6/30/2028	$15,534.87
Gullett	MX-4070N	C	1	2/7/2022	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	3	2/7/2022	7/1/2023	6/30/2028	$15,534.87
	MX-M365N	B/W	1	2/7/2022	7/1/2023	6/30/2028	$4,658.38
Harvey	MX-5071	C	1	N/A	7/1/2024	6/30/2029	$7,572.29
	MX-M5070	B/W	3	N/A	7/1/2024	6/30/2029	$15,534.87
Kinnan	MX-C304W	C	1	N/A	7/1/2024	6/30/2029	$2,657.30
	MX-4071	B/W	1	N/A	7/1/2024	6/30/2029	$7,572.29
	MX-M365N	B/W	4	10/13/2020	7/1/2023	6/30/2028	$18,633.52
Manatee	MX-40171	C	1	9/15/2021	7/1/2023	6/30/2028	$7,572.29
	MX-B455W	B/W	1	N/A	7/1/2024	6/30/2029	$2,884.29
	MX-M565N	B/W	3	9/15/2021	7/1/2023	6/30/2028	$15,535.14
McNeal	MX-4070N	C	1	9/15/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	4	9/15/2021	7/1/2023	6/30/2028	$20,713.52
Miller	MX-4070N	C	1	9/15/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	3	9/15/2021	7/1/2023	6/30/2028	$15,535.14
Mills	MX-4070N	C	1	9/15/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	8	9/15/2021	7/1/2023	6/30/2028	$41,427.04
Moody	MX-4070N	C	1	6/30/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	4	6/30/2021	7/1/2023	6/30/2028	$20,713.52
Myakka	Mx-4071	C	1	N/A	7/1/2024	6/30/2029	$7,572.29
	MX-M365N	B/W	1	7/30/2022	7/1/2023	6/30/2028	$4,658.38
Oneco	MX-4070N	C	1	2/7/2022	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	2	2/7/2022	7/1/2023	6/30/2028	$10,356.76
Palma Sola	MX-4070N	C	1	2/7/2022	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	4	2/7/2022	7/1/2023	6/30/2028	$20,713.52
Palmetto	MX-4070N	C	1	9/15/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	3	9/15/2021	7/1/2023	6/30/2028	$15,535.14
	MX-M754N	B/W	1	9/15/2021	7/1/2023	6/30/2028	$9,366.29
Prine	MX-4070N	C	1	9/15/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	4	9/15/2021	7/1/2023	6/30/2028	$20,713.52
Rogers Garden	MX-4071	C	1	N/A	7/1/2024	6/30/2029	$7,763.24
	MX-M565N	B/W	3	2/27/2022	7/1/2024	6/30/2029	$15,535.14
Samoset	MX-4070N	C	1	2/27/2022	7/1/2024	6/30/2029	$7,572.29

School	Model	Type	Device Count	End Date	Estimated Start Date	End Date	Estimated - New 5 Year Lease Total
	MX-M565N	B/W	3	2/27/2022	7/1/2024	6/30/2029	$15,535.14
Sea Breeze	MX-M4070	C	1	N/A	7/1/2024	6/30/2029	$7,763.24
	MX-C301W	C	1	4/11/2021	7/1/2023	6/30/2028	$2,657.30
	MX-M4071	B/W	1	N/A	7/1/2024	6/30/2029	$5,178.38
	MX-M365N	B/W	1	N/A	7/1/2024	6/30/2029	$4,658.38
	MX-M365N	B/W	1	N/A	7/1/2024	6/30/2029	$4,658.38
Stewart	MX-C304W	C	1	N/A	7/1/2024	6/30/2029	$2,657.30
	MX-M565N	B/W	2	6/30/2021	7/1/2023	6/30/2028	$5,178.38
	MX-M565N	B/W	2	2/27/2022	7/1/2024	6/30/2029	$5,178.38
Tara	MX-4070N	C	1	9/15/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M365N	B/W	4	9/15/2021	7/1/2023	6/30/2028	$18,633.52
Tillman	MX-3070N	C	1	9/15/2021	7/1/2023	6/30/2028	$6,530.29
	MX-M365N	B/W	2	9/15/2021	7/1/2023	6/30/2028	$9,316.76
Williams	MX-4070N	C	1	2/27/2022	7/1/2024	6/30/2029	$7,572.29
	MX-M565N	B/W	4	2/27/2022	7/1/2024	6/30/2029	$20,713.52
Willis	MX-4070N	C	1	2/27/2022	7/1/2024	6/30/2029	$7,572.29
	MX-M565N	B/W	3	2/27/2022	7/1/2024	6/30/2029	$15,535.14
Witt	MX-4070N	C	1	9/15/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	4	9/15/2021	7/1/2023	6/30/2028	$20,713.52

Middle School Multi-Function Device

School	Model	Type	Device Count	End Date	Estimated Start Date	End Date	Estimated - New 5 Year Lease Total
Braden River	MX-4070N	C	1	4/11/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M365N	B/W	5	4/11/2021	7/1/2023	6/30/2028	$23,291.90
Buffalo Creek	MX-4070N	C	1	6/30/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	2	6/30/2021	7/1/2023	6/30/2028	$10,356.76
Haile	MX-4070N	C	1	6/30/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	5	6/30/2021	7/1/2023	6/30/2028	$25,891.45
Mona Jain	MX-5071	C	1	N/A	7/1/2024	6/30/2029	$7,572.29
	MX-M5070	B/W	5	N/A	7/1/2024	6/30/2029	$25,891.45
Johnson K-8	MX-4070N	C	1	4/11/2021	7/1/2024	6/30/2029	$7,572.29
	MX-M365N	B/W	2	4/11/2021	7/1/2023	6/30/2028	$9,316.76
	MX-M565N	B/W	3	4/11/2021	7/1/2023	6/30/2028	$15,534.87
King	MX-4070N	C	1	4/11/2021	7/1/2024	6/30/2029	$7,572.29
	MX-C301W	C	1	4/11/2021	7/1/2023	6/30/2028	$2,657.30
	MX-M5071	B/W	1	N/A	7/1/2023	6/30/2028	$5,178.38
	MX-M365N	B/W	1	7/30/2022	7/1/2024	6/30/2029	$4,658.38
	MX-M565N	B/W	2	9/15/2021	7/1/2023	6/30/2028	$5,178.38
	MX-M565N	B/W	1	4/11/2021	7/1/2024	6/30/2029	$5,178.38
Lee	MX-4070N	C	1	4/11/2021	7/1/2024	6/30/2029	$7,572.29
	MX-M565N	B/W	4	4/11/2021	7/1/2023	6/30/2028	$20,713.52
Lincoln Memorial	MX-M565N	B/W	1	6/30/2021	7/1/2023	6/30/2028	$5,178.38
Nolan	MX-4070N	C	1	6/30/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	4	6/30/2021	7/1/2023	6/30/2028	$20,713.52
Palm View K-8	MX-4071	C	1	N/A	7/1/2024	6/30/2029	$7,763.24
	MX-M565N	B/W	3	2/27/2022	7/1/2024	6/30/2029	$15,535.14
Sugg	MX-4071	C	1	2/27/2022	7/1/2024	6/30/2029	$7,763.24
	MX-M565N	B/W	2	2/27/2022	7/1/2024	6/30/2029	$10,356.76

High School – Multi Function Device

School	Model	Type	Device Count	End Date	Estimated Start Date	End Date	Estimated - New 5 Year Lease Total
Bayshore	MX-4070N	C	1	N/A	7/1/2024	6/30/2029	$7,572.29
	MX-M565N	B/W	4	4/11/2021	7/1/2023	6/30/2028	$20,713.52
Braden River	MX-4070N	C	1	2/27/2022	7/1/2024	6/30/2029	$7,572.29
	MX-M565N	B/W	5	2/27/2022	7/1/2024	6/30/2029	$25,891.90
Lakewood Ranch	MX-C301W	C	2	10/13/2020	7/1/2023	6/30/2028	$5,314.60
	MX-5141N	C	1	10/13/2020	7/1/2024	6/30/2029	$7,572.29
	MX-M565N	B/W	1	10/13/2020	7/1/2024	6/30/2029	$5,178.38
	MX-M565N	B/W	1	10/13/2020	7/1/2023	6/30/2028	$5,178.38
	MX-M654N	B/W	1	10/13/2020	7/1/2024	6/30/2029	$7,763.24
	MX-M7570	B/W	3	10/13/2020	7/1/2023	6/30/2028	$23,289.72
	MX-M365N	B/W	1	10/13/2020	7/1/2023	6/30/2028	$4,658.38
Manatee	MX-5141N	C	1	10/13/2020	7/1/2023	6/30/2028	$7,572.29
	MX-M365N	B/W	5	10/13/2020	7/1/2023	6/30/2028	$23,291.90
	MX-M565N	B/W	6	10/13/2020	7/1/2023	6/30/2028	$31,070.28
Palmetto	MX-4070N	C	2	4/22/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M5071	C	1	4/22/2021	7/1/2023	6/30/2028	$5,178.38
	MX-M565N	B/W	4	4/22/2021	7/1/2024	6/30/2029	$20,713.52
	MX-M565N	B/W	2	4/22/2021	7/1/2024	6/30/2029	$10,356.76
	MX-M7570	B/W	2	4/22/2021	7/1/2023	6/30/2028	$15,526.48
Parrish Community	MX-5071	C	1	N/A	7/1/2024	6/30/2029	$7,572.29
	MX-M5070	B/W	6	N/A	7/1/2024	6/30/2029	$31,069.74
Southeast	MX-4070N	C	1	9/15/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	6	9/15/2021	7/1/2023	6/30/2028	$31,070.28
Horizons	MX-M565N	B/W	2	2/27/2022	7/1/2024	6/30/2029	$10,657.76

District and Additional Sites – Multi-Function Device

School/Site	Model	Type	Device Count	End Date	Estimated Start Date	End Date	Estimated - New 5 Year Lease Total
Harllee	MX-4070N	C	1	N/A	7/1/2023	6/30/2028	$7,572.29
	MX-M365N	B/W	1	N/A	7/1/2023	6/30/2028	$4,658.38
	MX-M565N	B/W	1	N/A	7/1/2023	6/30/2028	$5,550.25
OSA	MX-M565N	B/W	1	N/A	7/1/2023	6/30/2028	$5,178.38
Matzke	MX-3070N	C	1	4/11/2021	7/1/2023	6/30/2028	$6,530.29
	MX-B455W	B/W	1	N/A	7/1/2024	6/30/2029	$2,884.29
	MX-M565N	B/W	3	9/15/2021	7/1/2023	6/30/2028	$15,535.14
MTC Main	MX-4070N	C	1	6/30/2021	7/1/2023	6/30/2028	$7,572.29
	MX-C301W	C	1	7/30/2022	7/1/2024	6/30/2029	$2,657.30
	MX-M365N	B/W	3	7/30/2022	7/1/2024	6/30/2029	$13,975.14
	MX-M565N	B/W	1	7/30/2022	7/1/2024	6/30/2029	$5,178.38
MTC East	MX-4070N	C	2	7/30/2022	7/1/2024	6/30/2029	$$14,153.58
	MX-M565N	B/W	2	7/30/2022	7/1/2024	6/30/2029	$10,356.76
MTC West	MX-4070N	C	1	9/15/2021	7/1/2023	6/30/2028	$7,572.29
	MX-M565N	B/W	1	4/11/2021	7/1/2023	6/30/2028	$5,178.38
PSC	MX-4070N	C	2	7/30/2022	7/1/2024	6/30/2029	$15,144.58
	MX-M365N	B/W	2	7/30/2022	7/1/2024	6/30/2029	$9,316.76
	MX-M565N	B/W	3	7/30/2022	7/1/2024	6/30/2029	$15,535.14
SSC	MX-4070N	C	1	7/30/2022	7/1/2024	6/30/2029	$7,572.29
	MX-6070	C	1	7/30/2022	7/1/2024	6/30/2029	$8,685.29
	MX-M365N	B/W	2	7/30/2022	7/1/2024	6/30/2029	$9,316.76
	MX-M565N	B/W	4	7/30/2022	7/1/2024	6/30/2029	$20,713.52
	MX-B455W	B/W	1	7/30/2022	7/1/2024	6/30/2029	$2,884.29
Wakeland Support	MX-5141N	C	1	2/27/2022	7/1/2024	6/30/2029	$7,775.14
	MX-M365N	B/W	1	2/27/2022	7/1/2024	6/30/2029	$4,658.38

6.14 District Printing/Duplicating (Print Shop)

Manufacturer	Model	Lease End	Projected Lease/Maintenance Start	Projected Lease End	Estimated New 5 Year Lease Cost
Cannon	VarioPrint 140	January 2024	July 2024	June 2029	$142,735.80
Cannon	VarioPrint 140	January 2024	July 2024	June 2029	$73,509.00
Cannon	VarioPrint 140	January 2024	July 2024	June 2029	$73,509.00
Cannon	VarioPrint 140	January 2024	July 2024	June 2029	$290,711.40
Cannon	Software	January 2024	July 2024	June 2029	$8,510.00
Cannon	Maintenance	N/A	February 2024	N/A	TBD
RSA/WebCRD WF	Software	January 2024	July 2024		$7,500.00

$1.00 Buyout (Lease) – January 2024

SECTION 7

FUNDING PLAN

7.1 Major Funding Sources

The majority of funds utilized for the acquisition and support of technology come from within the District. Many of the figures provided below must be considered estimates as it is difficult to obtain precise figures when multiple funding sources are involved, when technology costs can vary, and when projecting into the future. The following are descriptions of the funding sources along with activities these funds support.

7.1.1 District Operating Budget - Information Technology Division

The staff costs for Information Technology (IT), the Adult, Career, and Technology Education Department, and schools that have allocated Technology Lab Manager positions, are generally funded from the operating budget. Other funding sources for staff positions may be applicable from year to year. Maintenance fees for District level software systems, and the cost for leasing telephony and data lines are also a part of the operating budget. A portion of operating funds is provided for software, technology related supplies, and for non-capitalized equipment. The IT Division consists of 4 cost centers: Information Technology, Printing & Duplicating, Property Records & Retention, and Student Demographics/Projections. These operating funds are considered recurring funds.

2020-2021 - $12,196,768.79

2021-2022 - $12,196,768.79 (Estimated)

2022-2023 - $12,196,768.79 (Estimated)

2023-2024 - $12,196,768.79 (Estimated)

2024-2025 - $12,196,768,79 (Estimated)

The IT operating budget numbers listed above (2021-2025) will be updated based on the School Board of Manatee County, FL approval of the annual School District budget.

7.1.2 District Capital Outlay Funds (Millage Funds and Sales Tax Proceeds)

A percentage of these funds are used to purchase technology equipment and to maintain/upgrade the technology infrastructure. These funds are reviewed and approved by the Capital Planning Committee annually and ultimately presented to the School Board for final approval. Capital Outlay Funds are considered recurring funds.

- 2020-2021 - $9,888,683.10
- 2021-2022 - $8,068,639.00 (Estimated)
- 2022-2023 - $7,551,759.00 (Estimated)
- 2023-2024 - $8,201,759.00 (Estimated)
- 2024-2025 - $7,775,720.00 (Estimated)

Capital Outlay Funds listed above for 2021-2025 are estimated and will be updated based on adoption and School Board approval of annual budget.

7.1.3 E-Rate Funding

The District has successfully applied for E-Rate federal funds annually since the inception of the program (20+ years). The Category One service supports data transmission services and/or INTERNET Access. The Category Two Services supports internal connections, managed internal broadband services, and basic maintenance of internal connections as outlined in the Eligible Services List published annually by Universal Service Administrative CO. (USAC). These service types include critical eligible products, such as access points, routers, switches, and structured cabling.

This program continues to be a critical part of the District's funding of technology infrastructure and INTERNET services. Category One eligible services continue to be funded at 80%. Starting in 2021-2022 (Funding Year 24) through 2025-2026 (Funding Year 28) the District's eligible E-rate available funds for Category 2 funding requests is estimated at **$7,766,168.00**. The District's financial obligation for eligible services is approximately **$1,553,233.60** (20%) during this first full budget cycle (FY2021-2025).

7.1.4 Additional Funding Sources

There are other sources of funding used for the procurement of technology including:

- CAPE
- Donations
- Grants
- IDEA-B (Specialized Equipment)
- School Internal Accounts
- School Discretionary FF&E
- Specialized Academic Instruction (SAI)
- School Improvement Plan (SIP)
- Title I and Title IV
- Florida School Recognition Funds
- Other

These expenditures vary widely from year to year, therefore projected figures are not provided in this Technology Plan.

The Information Technology (IT) Division works within its allotted budget to support the technology needs of our District. The projected funding for network/hardware, support staff, hardware and software maintenance, capital outlay for equipment, and funding for software acquisition is needed to meet the challenging and changing needs of technology in the District.

SECTION 8

TECHNOLOGY ACQUISITION PLAN

8.1 Identifying Appropriate Technologies

The District continually reviews new technologies that can enhance and improve teaching and learning, in addition to, District business requirements.

The process will include system age identification, quantity of systems per site, student counts per site and staff counts per site. The goal will be to implement a sustainable refresh replacement plan that will ensure equitable up to date technology at all school and department sites using a centralized purchasing approach of approved technology.

Alignment to District goals, District Strategic Plan and standardization is a requirement. Standards have been set for computers, audio visual equipment (panels), interactive classroom technology, multi-function devices, network printers, networking, telephone infrastructure and handsets, public address systems, athletic field sound systems and peripheral devices.

8.2 Acquisition to Meet Widest Range of Student Needs

The School District of Manatee County (SDMC) District leadership team continuously reviews all educational software applications annually for effectiveness and targeted implementation.

8.3 Acquisition Timetable

The District maintains a centralized procurement process to purchase technology at all school and department sites. The goal is for the District to maintain funding and sustain the technology refresh cycle to ensure no school relies on irrelevant technology beyond its useful life cycle. The computer refresh plan is an annual priority. The refresh plan will require the removal of outdated legacy systems and technology equipment that are no

longer relevant and sustainable for SDMC students and staff. Additionally, these outdated systems create significant security vulnerabilities to the District.

8.4 Acquisition Standards and Procedures

The District has developed procedures and standards for technology acquisition. Standards and procedures are reviewed each year for potential revision. Key examples follow:

- Computer Standards including, desktops, mobile devices, monitors, printers, digital displays, MFD and other peripheral devices used in the classroom and support departments.

- A standardization of network specifications, structured cabling including PA, telephony (VoIP) specifications and procedures.

- Manatee Schools Television department recommends AV solutions and equipment including video cameras and editing equipment used in our schools. Changes are made each year based on repair history and price changes.

- All servers are managed by Data Center Services (DCS). DCS determines appropriate patches, upgrades, security vulnerabilities, and system hardening. Servers are purchased with five-year support agreement.

- Staff are required to submit service desk tickets to request services from the Information Technology Division.

- Future RFP/RFQs directly related to the acquisition of a new Enterprise Resource Planning System and Student Information System will require an outside consultant and/or subject matter expert(s) to thoroughly analyze District needs. Prior to engaging in this expenditure for an outside consultant, the Superintendent will request the School Board approve the expenditure for the outside consultant.

- SDMC will clearly explain benchmarks based upon RFP/RFQ that are expected in the responses, scoring criteria and how to evaluate each RFP/RFQ based on specific criteria.

- SDMC will develop negotiation plan for IT service provider contracts that encompass the full and complete scope of services, cost, deliverables, and penalties for failure to meet a specified and agreed schedule.

- Procurement at the lowest price consistent with desired quality in accordance with standards and following local, state and federal procurement policies and statutes including ERATE requirements set by Universal Service Administrative CO. (USAC). USAC administers the Universal Service Fund under the direction of the Federal Communications Commission (FCC).

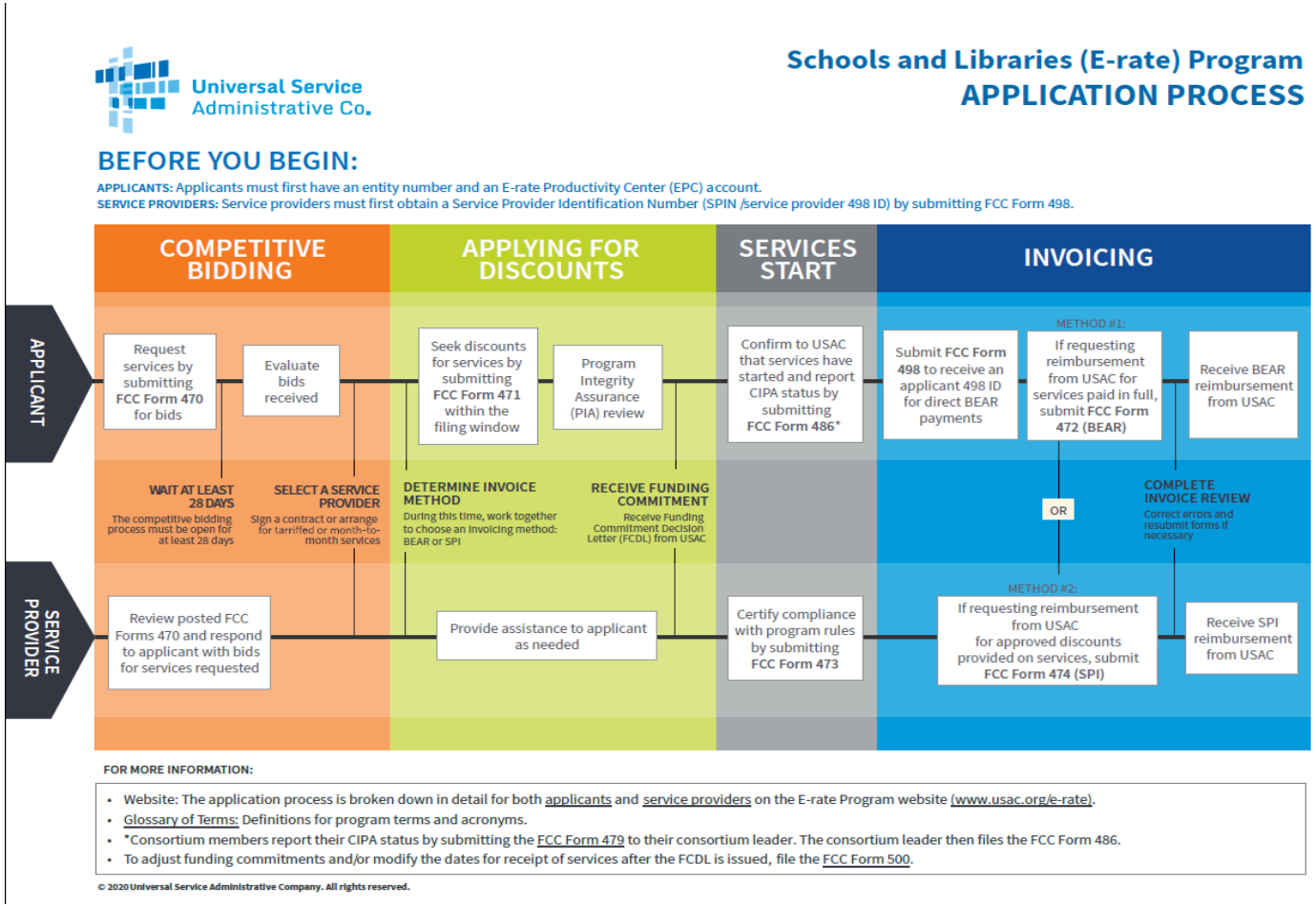
- Backup processes for IT systems that are identified as LEGACY replacement systems will be maintained to ensure that the replacement IT system and/or software is properly integrated and functioning.

- Major Information Technology Systems being considered for implementation in SDMC should have a proven K-12 footprint with a successful and documented record for delivering projects on time and on budget for similar services acquired by similar entities.

- Any service provider contract selected that contains provisions that deviate from the specifications included in RFP/RFQ must provide justified documentation on how the deviation did not compromise the competitive selection process or the desired outcome requested by the District.

NOTE: SDMC will follow the below listed steps and will incorporate any local procurement processes required by School Board policy when requesting E-Rate services:

1. Competitive Bidding
2. Selecting a Service Provider (most cost-effective provider)
3. Applying for Discounts
4. Application Review
5. Starting Services
6. Pay for discounted services or pay for services and invoice USAC for reimbursement



8.4.1 – Acquisition Action Steps

The Information Technology Division follows the below procurement guidelines when purchasing Information Technology products.

Purchasing Department
Procurement Thresholds and Methods

Requisition Total	Policy	Procedure
Less than $20,000.00	Verbal Quotes	– Determine if a District bid/RFP exists by contacting the Purchasing Buyer and reviewing the Procurement website. – To ensure the best price, obtain written or telephone quotes. – If necessary, contact the Purchasing Department to assist you in finding suppliers. – Comments in requisition should read: "Telephone quotes obtained from vendor 1, vendor 2, and vendor 3 (use vendors' name). Records maintained at requestor's site. – Keep completed quote form at your site. The Purchasing Department or auditors may request copies. – The Purchasing Department reserves the right to verify, re-quote the items, or require written quotes.
The following is processed by Purchasing Department with exception of specifications supplied by site.		
Between $20,000.00 and $49,999.99	Written Quotes	– Determine if a District bid/RFP exists by contacting the Purchasing Buyer and reviewing the Procurement website. – Attach written quotes with complete specifications to the requisition. – The Purchasing Department will review the three written quotes.
$50,000.00 or higher	Invitation to Bid, Request For Proposal, or Piggyback AND Board Approval	– Determine if a District bid/RFP exists by contacting the Purchasing Buyer and reviewing the Procurement website. – Ensure sufficient budget is available. – Contact Purchasing Buyer to initiate the solicitation process. – Assist Purchasing Buyer with item specifications. – Allow at least 60 – 90 days for solicitation and award. – The Purchasing Department will contact you with the supplier information once the process is complete.
Sole Source	Sole Source Letter	– Determine if a District bid/RFP exists by contacting the Purchasing Buyer and reviewing the Procurement website. – Obtain a sole source letter from the supplier. Forward the letter and the department justification of need to the Purchasing Buyer. – The Purchasing Department will verify and seek necessary review and approval, including Board approval if required. – The Purchasing Department will negotiate price, delivery, and terms as needed. – The Purchasing Department will contact you with supplier information once the process is complete. The sole source process will take a minimum of 7 business days to complete.

8.5 Guidance for Decision-Making

The Information Technology Leadership (ITL) Team provides guidance and direction to all schools and departments on the purchase and implementation of technology products and services.

All technology projects, implementations and initiatives are reviewed by the Chief Technology Officer prior to acquisition. The goal is to standardize whenever possible and provide the most cost-effective solutions for District and school initiatives while meeting the instructional needs of SDMC.

SECTION 9

ACCESS

9.1 Equitable Access

Equitable access to technologies to support teaching and learning is accomplished by:

- The District has implemented a 5-year hardware refresh program based on available annual funding. This program will use student enrollment numbers, staff unit allocations, and annual site assessments to determine equitable access to technology resources to support teaching, learning, and testing at all schools.

- A multi-year plan is included in this technology plan that provides all schools equitable access to networking infrastructure to ensure safe, secure, and efficient use of the INTERNET and INTRANET.

- Multi-year plan that provides updated technology and renovations to each school's media center.

- Digital Display Panel project for all academic classrooms.

- The District ESE department responds to requests from school staff and parents for assistive technologies. Laptop computers and special input/output devices are provided as appropriate after reviewing each individual case. Special software is also provided when needed.

- All sites have INTERNET access to provide resources such as our District website, MYSDMC SSO, Student Information System, Business System, eLearning Manatee District Learning Management System and a variety of instructionally appropriate sites to support teaching and learning.

- The District's mass notification call out system provides direct communications to staff and parents. The system reports student absences and delivers important school or District information to the selected group of recipients.

- In an effort to reach all parents and community members, the ~~Manatee Education Television~~ Manatee Schools Television station broadcasts a variety of programs. School Board meetings and workshops are also broadcast live ~~bi-monthly~~ in an effort to keep the community informed.

- The District's three-year implementation plan provides upgraded VOIP/PA systems for all schools with additional crisis communication integration.

- MYSDMC FOCUS is a new mobile application launched in 2020 providing students with real-time access to grades and other important student resources.

- The District implemented a new product suite that provides all school and department websites a framework that automatically checks against WCAG accessibility standards. Additionally, it automatically generates alternative formats for SDMC content that provides our users added flexibility, choice and providing a better digital experience.

9.2 Acceptable Use Guidelines

District Acceptable Use Guidelines have been approved by the School Board and have been electronically acknowledged by the employees of the School Board of Manatee County through MYSDMC SSO. The document protects the confidentiality of students, intellectual property rights, licensing agreements and addresses the legal/ethical standards for sharing resources with other educational entities (Appendix A).

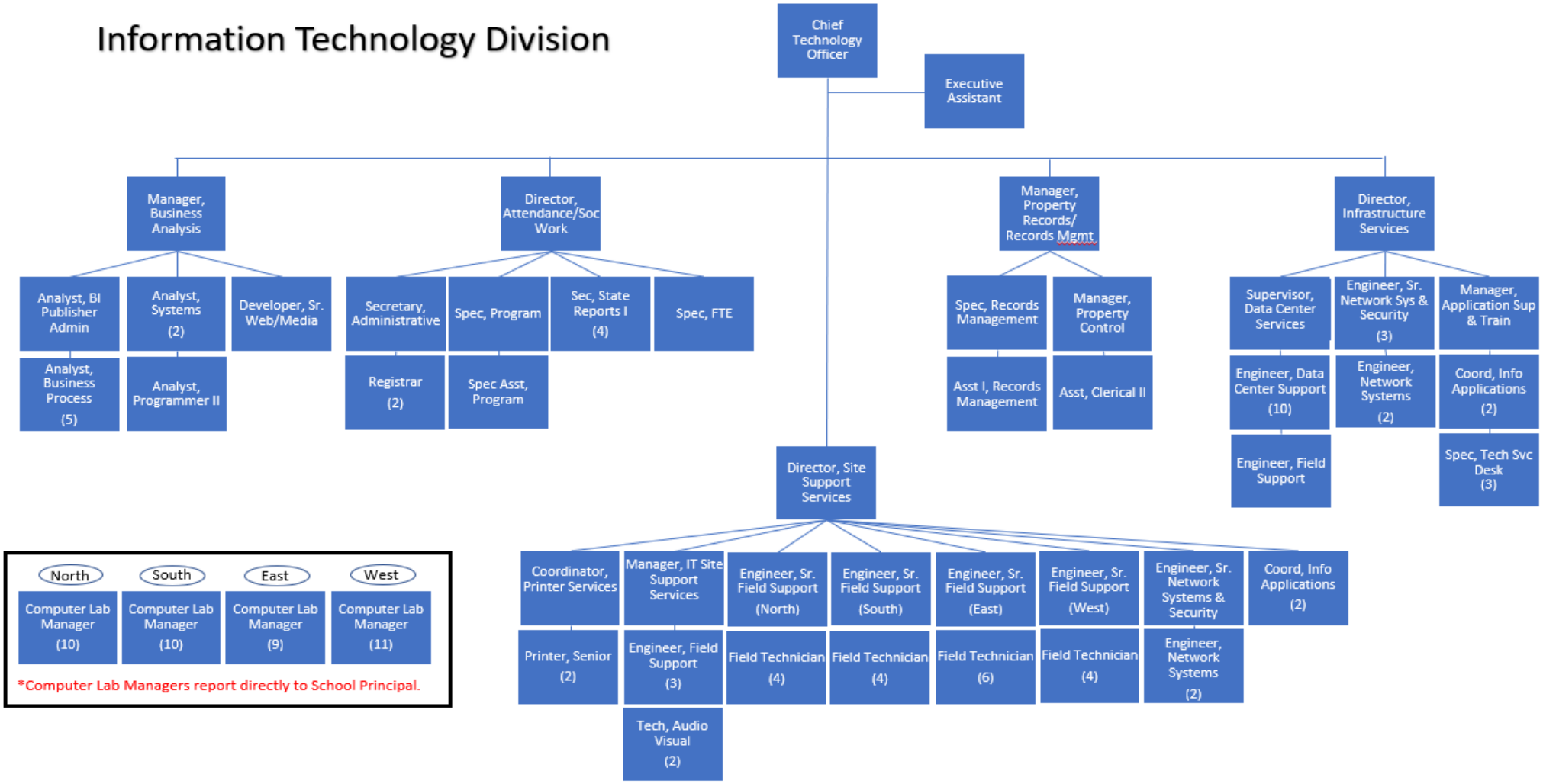
A set of Website Guidelines have been developed to provide guidance to all sites publishing web-based documents. These guidelines are designed to keep students focused on instructional uses of web pages and to protect the integrity of the District (Appendix B).

SECTION 10

USER SUPPORT PLAN

10.1 IT Organizational Chart

Providing adequate technology support for teachers, staff, and students has been identified as a focus area in the District's strategic plan.



10.2 Infrastructure Support Services (ISS)

The ISS team is comprised of three Departments: Network Support Services (NSS), Data Center Services (DCS), and Application and Support (Service Desk).

NSS is comprised of five staff members.

Dual 10 GBPS INTERNET Service Providers	Dual Failover 40 GBPS Data Center Networks	Dual HOSTED Firewalls	HOSTED Web Filtering
120 miles of District owned Fiber	600 Network Switches serving 58 District Sites	3,600 Wireless Access Points	Site Structured Cabling
Cyber Security Detection and Prevention	Network Access Control	Network Monitoring	E-rate program Network Infrastructure Replacement

Enterprise network management tools have been implemented that enable a greater degree of remote monitoring and problem solving.

The workorder priority is:

- District-wide network issue
- School-wide network issue
- Building network issue
- Lab network issue
- Classroom network issue
- User network issue

Four members of the NSS team are assigned to one of four regions (East, North, South, West).

10.3 Data Center Services (DCS)

The Data Center Services (DCS) team is comprised of twelve staff members. The team is responsible for all SDMC servers and storage monitoring, troubleshooting, backup and recovery, replacement of defective systems and upgrade of legacy enterprise equipment.

The team supports all District servers (physical/virtual) and storage systems located both at the School Support Center and the Disaster Recovery site.

Additional Services Supported by DCS:

MS Active Directory/Group Policy	System Updates	eDiscovery	Security Awareness	Certification Testing
MS Azure	Imaging	Cyber Security	Enterprise Printer Administration	Microsoft Office 365/email
MS SQL	MYSDMC SSO	Audit Compliance and Remediation	File Transfer Automation	SharePoint
Management Destiny Resource Manager	Identity Management	Data Loss Prevention	Application Support	Google G-Suite

Four members of the DCS team are assigned to one of four regions (East, North, South, West).

10.4 Application Support and Training (Service Desk)

The Application and Support team consists of six staff members.

Service Desk	IT Training and Support	Centralized ID Badging

10.5 Site Support Services (SSS)

The SSS team has 32 team members. 17 Field Technicians are assigned directly to school sites supporting a total of 43 school sites for all Tier 1 and Tier 2 site support services. Seven Field Technicians are 100% dedicated to (7) high schools and 1 Field Technician supports Manatee Technical College (Main, East, West).

The team's responsibilities include, but are not limited to:

Device Distribution	Centralized ID Badging Hardware	Digital Display Devices – Promethean and Samsung	JAMF Device Management – Apple
Maintenance and Repair	Printers/MFD	IT Training and Support	Magic Info - Samsung
Inventory Management	Peripheral Devices	Raptor	Cellular Technologies
58 Telephone PBX Systems	7000 Telephony Handsets and Cellular Phones	Performance Sound Systems – Cafeterias, Gymnasiums, Athletic Stadiums/Fields	Print Services and Duplicating
VoIP Infrastructure	Public Address Systems (PA/Intercom)	Support Destiny Resource Manager	IT Surplus Project Management

NOTE: The District is currently implementing a 3-year VoIP telephony plan to eliminate the legacy PBX systems. Project completion scheduled for 2021-2022.

10.6 Systems and Programming Services

The Systems and Programming Services team consists of ten staff members.

SIS FOCUS Support	SIS Ad Hoc Reporting	SIS 3rd Party Vendor Support	SIS Auto Provisioning
SIS FLEIDS	SIS PostgreSQL	MTC Campus Solutions	Cost Report Server Management
State Reporting - Staff	Website Management	Mass Notifications Management	Custom INTRANET Interfaces
Business Systems Security	Business Systems Reports and Queries	Business Systems Training and Support	Business Systems Third Party Vendor Support

10.7 Student Demographics

The Student Demographics/Student Information System (SIS) team consists of 13 staff members.

The team's responsibilities include, but are not limited to:

Student Assignment	Home Education Services	FOCUS Student and Parent Portal	State Reporting
School Choice	FOCUS Gradebook	FOCUS Training - Schools	
Virtual Education Services	Enterprise Scheduling	Primary Support - Registrars	

Currently, the team supports the District's 33 elementary schools, 8 middle schools, 2 K-8 schools, 7 high schools, 14 charter schools, 17 contracted or "special" sites, and 1 alternative school.

10.8 Property Records

The Property Records/Records Management (PRRM) team consists of five staff members. The PRRM team is responsible for the management of archived student and administrative records, as well as the tracking and disposition of all tangible personal property District wide.

Areas of responsibility include but are not limited to:

Secure Storage	Training of School/District Level Personnel	Deletions of Financial Assets - ERP	Annual Physical Inventory
Timely Destruction of Student and Administrative Records	Recording of Acquisitions	Tagging of ALL Financial Assets	Processing of Electronic Transcripts - Alumni
Fulfillment of Requests – Student Records	Inventory Transfers and Updates	Transfer and Disposition – Surplus Property	Digitization of Student and Staff Records

This office ensures the timely destruction of student and administrative records in accordance with State retention guidelines.

10.9 Computer Lab Managers

Computer Lab Managers (CLM) are currently assigned at elementary and middle schools only. CLM provide instruction and assistance to students engaged in computer learning and instructional activities. This position also performs all other duties of the Teacher Assistant classification in supporting the assigned curriculum.

CLM also provide Tier 1 technology support at the assigned school following IT Division best practices and operating procedures. Issues are escalated using the IT Division Technology Service Desk platform and assigned Site Support Services Sr Engineer.

Site Support Services provides information and documentation to the Lab Managers as changes in technology occur and provides opportunities for meetings throughout the year to discuss technology support, providing an environment to collaborate and share ideas. This position reports to the Principal.

10.10 MSTV

The MSTV team consists of five staff members. The MSTV team is responsible for airing approximately 2,000 program titles, and to broadcast satellite-received programming, training activities, and special events to create a level of equity in access to educational content among all schools in SDMC. The School Board of Manatee County workshops and meetings are broadcast and streamed live to citizens. Available at: https://www.manateeschools.net/Page/3688 The MSTV studios are located on the Professional Support Center (PSC) campus. This department reports to the Director of Communications.

Areas of responsibility include but are not limited to:

Digital Studios	Digital Signage	Audio/Visual - Cafeteria	Emergency Response Communication – Schools/Classrooms
Television Production Equipment	Microwave Broadcasting Equipment	Audio/Visual - Auditoriums	61 IPTV - educational/informational channels
IPTV	Digital Coax Distribution Systems	Audio/Visual – Sports Venues	Teacher Request – Educational Programs

SECTION 11

STAFF TRAINING and PROFESSIONAL DEVELOPMENT PLAN

11.1 Increasing the Use of Technology in Classrooms and Media Centers

11.1.1 Technology Integration Training

Proficiency alone is inadequate. Teachers must be provided with support for learning how to teach differently and creating learning experiences for students not possible in the absence of technology.

A professional learning curriculum aligned with this goal, accompanied by the expectation for continuous improvement, must be developed or adopted and delivered in multiple modalities to increase the pedagogical capacity of our instructional staff.

The Information Technology reorganization plan in 2020 provided the opportunity to launch an IT Training Department that consists of a team of (3) high-quality Information Applications Coordinators that is vital to provide key IT training on new and existing applications and projects.

11.1.2 Computer Based Training

The District currently uses MyPGS to allow staff to register and receive on-line and in person training. A District wide learning management system (eLearning Manatee) has been implemented to facilitate easy access to digital content and resources. In 2020, due to COVID-19, Information Technology Division fast tracked the implementation of TEAMS to support the District's eLearning Manatee platform and provide a robust and efficient way to train school and District staff remotely.

The continued identification of training needs and delivery systems that minimizes teacher time away from the classroom and provides cost-effectiveness remains a high priority.

The implementation of TEAMS is a critical training delivery method that has provided training opportunities that minimizes time away from the primary assigned cost center.

A needs assessment is conducted annually that surveys all instructional and support personnel to determine the types of training that are needed.

11.1.3 Enterprise Resource Planning – PeopleSoft HCM/FSCM

In 2020, Information Technology implemented a new approach to providing training to new staff members during onboarding to ensure specific courses are assigned based on role(s) would receive the required training for the District's Business System. This new approach also addresses continued professional development training opportunities for existing staff members.

- Professional Learning department provides notification to IT with a listing of all new hires on the first day of the pay period.
- Systems and Programming Business Analyst/Trainer sends email with instructions for courses to all new hires 48 hours after hire date to ensure access has been provided through MyPGS/Schoology.

Example of course table listed below:

Role	Course Name	MyPGS Course #	Schoology ID	Current Modality
ESS	PS – ESS Personal Information	12989	Redacted	Online
	PS – ESS Time & Labor	12990	Redacted	Online
Role	**Course Name**	**MyPGS Course #**	**Schoology ID**	**Current Modality**
	PS – ESS Absence	12991	Redacted	Online
	PS – ESS Payroll	12992	Redacted	Online
	PS – ESS Benefits	12993	Redacted	Online
Bookkeeper/Secretary	PS - P-Card	12524	Redacted	Teams
	PS - Requisitions	13078	Redacted	Teams
	PS – Budget	12670	Redacted	Teams
	PS – Travel & Expense	12512	N/A	Teams
	PS – Timekeeper Reporting Time	12875	N/A	Teams

- Managers/Supervisors/Directors are identified during the onboarding process and are provided a resource document with relevant job aids.
- Bookkeeper/Secretary positions are also identified during the onboarding process and a BA/Trainer will reach out directly to discuss additional training opportunities.
- There are over 400 plus Job Aids available for users of the Business System.

- There are over 60 plus videos that are being integrated into MYPGS for users of the Business System. Videos are added each month and are edited when needed and follow business processes and procedures provided by our various department leadership staff.

11.1.4 Security Awareness

In 2020, Information Technology developed a comprehensive training program that would address multiple areas of concern related to Information Technology and Security Awareness. Annually, all SDMC users are required to complete specific Security Awareness Courses. These courses generally range from 15 to 30 minutes in length covering three different course titles.

Additionally, we have identified "user groups" that are required to complete additional security awareness courses throughout the year based on their specific role in our organization and to ensure we keep security awareness relevant and that we are reminded that each user plays a critical role in securing our student and staff data. Examples of "user groups" are listed below:

All Staff	High Risk	Information Technology	Senior Leadership

Examples of Course Titles that are required based on assigned user groups are listed below:

You are the Shield	Malware	Email and Phishing	Passwords
Targeted Attacks	Browsing Safely	Data Security	Working Remotely
Social Engineering	Hacked	Ethics	Personally Identifiable Information (PII)
Privacy	Cloud Services	Help Desk	Senior Leadership

Information security policies are critical to safeguard our data systems, including hardware, software, and the personal information we collect, store, and transmit throughout the District. Understanding potential security threats results in greater awareness and protection for both the District and employee data.

11.1.5 Information Technology - Professional Development

In 2020, Information Technology Leadership (ITL) started requiring all assigned IT staff members to complete a minimum of three IT courses related to their primary area of responsibility annually. IT team members can complete additional courses at their discretion available through the course library. Examples of courses are listed on the following page:

Professional Development Courses

CCNA Routing and Switching (2018)	CompTIA Accelerated Network+ (N10-007) Vendor-neutral	Customer Service Skills for Techies	CyberSec First Responder (CFR-310)
Hands-on with SCCM Microsoft System Center Configuration Manager	MCSA Windows 10 - 70-697 (UPDATED 2018) Configuring Windows Devices	MCSA Windows 10 - 70-698 (UPDATED 2018) Configuring Windows Devices	MCSE Windows Server 2016- 70-744 (UPDATED 2018) Securing Windows Server 2016
Microsoft 365 Identity and Services (MS-100)	Microsoft 365 Mobility and Security (MS-101)	Microsoft Azure (AZ-103)	Microsoft Azure Fundamentals (AZ-900)
Microsoft Deployment Toolkit Using MDT	MTA Networking Fundamentals - 98-366 (UPDATE 2018) Networking Fundamentals	PowerShell Basics for Administrators	PowerShell Scripting Writing scripts using the PowerShell language

11.1.6 Training Labs

There are five computer labs available within the District dedicated to training: two at the Professional Support Center, two at Wakeland Support Center and one at the School Support Center.

11.2 Professional Learning

The goal of a "high quality education" is embedded in the state's constitution. Experiencing such an education requires a high-quality professional development system for teachers, school leaders and staff. Our system consists of inter-related policies and practices that support professional learning. URL: https://www.manateeschools.net/Page/2157

11.3 Leadership Development Programs

We seek to develop dedicated school-based leaders who:

- Commit to ongoing improvement toward student achievement
- Establish positive learning environments
- Foster positive professional relationships
- Build a culture of trust
- Communicate clearly
- Nurture teacher success

  URL: https://www.manateeschools.net/Page/5896

11.4 Other Sources of Training and Technical Assistance

The following is a list of additional sources of ongoing training and technical assistance available to teachers and administrators:

1. University of South Florida's Center for Instructional Technology (FCIT)
2. Florida Digital Educator Program
3. Florida Educational Technology Conference (FETC)
4. State College of Florida (SCF) courses
5. Florida Leadership Network training for Principals
6. University of Central Florida's Instructional Technology Resource Center
7. FLDOE Office of Educational Technology
8. Florida Diagnostic and Learning Resources System (FDLRS)
9. International Society for Technology in Education
10. Vendor provided training based on Superintendent or Board Approval of products and services

SECTION 12

Program Evaluation

12.1 Evaluation of Integration Process

The impact of instructional technology can only be measured against its impact on teaching and learning. Therefore, the District's goal was to adopt, implement, and sustain a measurement tool or rubric and incorporate its use into walkthrough and classroom observation instruments. To ensure meaningful data and inter-rater reliability, training on applying the selected rubric to learning events was developed, implemented, and delivered to all administrative staff charged with evaluating classroom instruction.

12.2 Evaluation System

The School District of Manatee County (SDMC) promotes student achievement by helping teachers and administrators excel in the school and classroom. Teacher effectiveness is the most influential factor to positively impact student achievement. Our goal is to promote innovative and effective teaching in every classroom. Supporting teachers to excel as professionals through a focus on a site-based system of support at every school, students will achieve more and be prepared for life after graduation. URL: https://www.manateeschools.net/Page/6103

12.3 Impact on Achievement

A combination of assessment tools and strategies will be used to determine the impact of the technology plan on student achievement, as defined in the Florida Standards or Next Generation Sunshine State Standards (NGSSS) and the National Educational Technology Standards (NETS) for students. The assessment plan will focus on the following areas:

- The ability of students to demonstrate basic technology operational knowledge and skills.

- The ability of students to utilize technology resources for learning, productivity, and creativity as applied to meeting subject area specifications defined in the Next Generation Sunshine State Standards.
- The ability of students to utilize technology to communicate ideas and work collaboratively to support individual learning and contribute to the learning of others.
- The ability of students to utilize technology to gather, evaluate and ethically use information from a variety of sources and media.
- The ability of students to use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions utilizing appropriate technology tools and resources.
- The impact of technology utilization on student achievement as measured by the Florida Standards Assessments (FSA).
- Demonstration of understanding human, cultural, and societal issues related to technology and practice legal and ethical behavior.
- The ability of teachers to utilize technology in student learning experiences.
- The ability of teachers to utilize technology in the process of differentiating instruction to accommodate individual learning styles and modalities.
- The utilization of technology in the assessment of student performance including diagnosis (screening), monitoring (formative assessment), and examination of mastery (summative assessment) strategies. Annually, our schools will use data from the assessment plan to help drive staff development and move goals and objectives forward.

Appendix

A

Information Technology/Related Department Policies

1. **Students – 5136 Wireless Communications Devices**
   http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EF8258AF

2. **Students – 5136.01 Technology Resources and Other Electronic Equipment**
   http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EF8258AF

3. **7300 – Property Custodianship**
   http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=APMM8C55999B

4. **7310 – Disposition of Surplus Property**

   http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=BFYNAG5C2695

5. **7320 – Acquisition, Removal, Disposal, Sale, or Exchange of Major Tangible Property**
   http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=BFYNAH5C2699

6. **7450 – Property Inventory**
   http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=B7734H7595F9

7. **7530 – Lending of Board-Owned Equipment**
   http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=APMM8R5599A8

8. 7540 – Technology
   http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=BFYNAJ5C269E

9. 7540.01 – Technology Privacy
   http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EH8258B2

10. 7540.02 – Web Content, Services, and Apps
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EJ8258B3

11. 7540.03 – Student Technology Acceptable Use and Safety
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EK8258B4

12. 7540.04 – Staff Technology Acceptable Use and Safety
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EL8258B6

13. 7540.05 – District-Issued Staff E-Mail Account
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EM8258B7

14. 7540.06 – District-Issued Student E-Mail Account
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EN8258B9

15. 7542 – Access to District Technology and/or Information Resources From Wireless Communication Devices
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EP8258BB

16. 7543 – Utilization of the District's WEBSITE and Remote Access to the District's Network
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EQ8258BD

17. 7544 – Use of Social Media
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=B7734J759604

18. 8305 – Information Security
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=AWH5EF8258AF

19. 8310 – Public Records
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=APMM965599B5

20. 8315 – Information Management
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=BFYNAL5C26A6

21. 8320 – Records Management
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=APMM985599B7

22. 8350 – Confidentiality
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=B7734L75960D

23. 8606 – Use of Wireless Communication Devices by District School Bus Operators
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=APMM9U5599CB

24. 8625 – Ban on Texting While Driving
    http://go.boarddocs.com/fl/mancofl/Board.nsf/goto?open&id=ATQNBZ5EB752

Appendix B

WEBSITE GUIDELINES

The goal for the School District of Manatee County web presence is to leverage technologies that appropriately, consistently, and safely engage and inform our community, staff and students online.

The web presence is to consist of the following components:

1. District website with Department sections
2. School websites
3. Internal websites (Intranet)
4. Mobile device specific websites
5. Learning Management System website
6. Social Media integration
7. Ancillary (third-party) website integration

In development and acquisition of these components the following standards will be required:

1. Seamless integration for the end-user where feasible
2. Low technical point of entry for content creators
3. Device and Operating System agnostic applications
4. Consistency in design and user interface where possible
5. Scalability and future-proofing
6. Security and standards compliance

To address these standards, the District will utilize an Enterprise Community Engagement Suite, the eLearning Manatee LMS and Microsoft SharePoint (INTRANET) as its primary web platforms for online communication and public/parent/student/staff interactions, whenever appropriate.

Additional allowances will be evaluated on a case-by-case basis through requests submitted using the Technology Service Desk application.

Oversight

Implementation/governance will be managed under Systems and Programming department of the Information Technology Division.

Administrative responsibilities will fall into the following user groups:

1. Super Admin/Web Developer - Access to control entire site, code development, integration, user management, establish/monitor design & content guidelines, and top-level training
2. Site Super User/Web Editor – Access to edit School or Department website, monitor compliance to design & content guidelines; may have user management and local training
3. Content Creators – Access to specific content areas to create and curate content
4. Authenticated End Users – Read access and ability to interact with content and other users
5. Non-Authenticated End Users – Read only access

Site Super User(s) will be chosen by the Department Manager or school Principal. It is recommended that multiple Super Users be chosen for each site for the purposes of intellectual redundancy. One Super User should be

designated as the primary contact for each site. Initial training and continued professional development/training as directed by Information Technology is required in order to maintain this role.

A design specification guideline, and template(s) where appropriate, will be drafted to promote consistency in branding and user experience across all District sites.

Content

All public-facing website content shall adhere to design guidelines and be created within District-supported content management system (CMS), unless technical or other limitations apply.

All student-facing instructional content shall be created in and contained by the District-supported Learning Management System (LMS), unless technical or other limitations apply.

All staff-facing website content shall adhere to design guidelines and be created within District-supported internal websites (Intranet), unless technical or other limitations apply.

Exceptions to usage of the CMS, LMS or Intranet platforms must be authorized by the Information Technology Division/ Chief Technology Officer.

Staff shall be prohibited from maintaining third-party platforms for public/parent/student/staff communications on behalf of the District or a school without prior District approval. Examples include social media sites, class pages, course content, club activities and staff learning communities. Staff are encouraged to use the District-supported CMS, LMS and Intranet for these purposes.

All content shall conform to school board policies, established school guidelines and copyright laws, and shall not violate federal, state, or local laws.

All content shall adhere to the SDMC Electronic Communications Acceptable Use Policy.

All content shall be academic, school or department related. Advertising or commercial use other than recognition of our school business partners is prohibited.

Servers, software platforms, data connections, virtual and/or physical equipment shall not be used to store, transmit or process any functions other than legitimate educational uses and purposes appropriate, authorized by, and specific to the respective sites/programs. The use of technology shall be consistent with existing policies and procedures.

All users (Web Developer, Site Super User, Content Creator, Classroom Teacher) shall be responsible for ensuring that website content they publish is appropriate, timely, accurate and functional (i.e. hyperlinks).

Classroom Teachers shall be responsible for monitoring compliance of student-contributed content on LMS courses and/or third-party websites that they have management responsibilities for.

The District shall provide monitoring and reporting tools for compliance with ADA and Section 508 guidelines via a reporting and remediation web governance suite.

Privacy of Student Information – Directory Information

Some information in school records is not confidential and may be released without parental consent. Known as "directory information", it includes the following:

1. Full legal name
2. The image or likeness in pictures, videotape, film or other medium
3. Dates of attendance
4. Major field of study
5. Participation in officially recognized sports and activities
6. Height and weight of athletic team members
7. Degrees and awards received
   Most recent previous educational institution attended
   Subsequent educational institution attended
   Academic work intended for publication or display

If parents do not want directory information released, they must notify the Principal in writing no later than September 15 of each school year or within 30 days of receiving the annual notice. NOTE: Objecting to the release of directory information may result in the student's name, photograph and other directory information being excluded from the yearbook, sports programs, and other school publications.

Permission must be obtained from staff members prior to displaying their photograph or information. A list of those who do not wish their photos to be published shall be kept on file.

No web content should publicly divulge contact information or personally identifiable information about students other than the directory information. No web content should allow the public to contact a student directly.

Copyright

Website content must conform to copyright and intellectual property laws. The author of the web page must not use copyrighted materials without permission. The fair use doctrine (Section 107-118, Title 17 US Copyright Law) is a guideline for limited non-commercial use of copyrighted works and not an infallible defense for use of copyrighted works without permission.

Appendix C

Division 17b-27b Integrated Communication System

MCSD's IT Department furnishes the network equipment for CM installation and patching.

All underground pipes in the MDF and IDF rooms shall be permanently labeled with source and destination room numbers for each pipe.

Provide one 4 post server rack in the MDF Room.

Do not use coaxial cable.

Multimode fiber optic cable will be used to connect communication closets with each other. All fiber optic cable will be home run from each communication closet to the main distribution frame without splicing or cross-connections. Category 6A UTP cable will be used between the communication closets and the communications station outlets. A single manufacturer's product will be used for all like system components.

Upon completion of the GMP, the CM will provide quantities of telecommunication outlets (data drops) to the Project Director. This information will be provided to and coordinated with IT for ordering network equipment.

Fiber Optic Patch Panels: All communication closets shall terminate fibers with LC type ceramic connectors manufactured by Siecor, Fiberopticx, Ortronics, or approved equivalent.

Fiber Optic Cable: Each outlying IDF communication closet will have one pair multimode fiber optic cable for every 48-station cable drops per closet, plus three additional pairs of each type for future growth. The minimum number of single mode and multimode pairs per closet will be six of each type. The cables will be home run to the MDF closet without splices or cross connects and will be rated for the environment in which it is installed.

Fiber Optic Patch Cables: Contractor shall supply one fiber optic jumper/patch cords for each termination in each communication closet. Patch cords shall be two meters long with LC-type ceramic connectors on both ends.

Station Outlet Patch Panels: Category 6A patch panels shall consist of RJ45 non-keyed modular jacks with all 8 pin positions prewired to self-contained 110D type IDC blocks. Patch panels shall be 24 or 48 port and manufactured by Ortronics, Inc., Siemon Company, Panduit, Leviton, or prior approved equivalent.

Station Outlet Cables: Terminate in EIA-568-B configuration. All cables will be Category 6A UTP and shall be continuous from each communications outlet to the patch panel without splices.

Station Outlet Patch Cables: Contractor will provide one station outlet cable and one IDF communication closet patch cable for every data drop. Provide 25% of cables 3'-0" long, 25% of cables 5'-0" long, 25% of cables 9'-0" long and 25% of cables 15'-0" long. Contractor shall provide manufacturer terminated patch cables. Acceptable manufacturers include: Belden or equivalent approved by District IT Department.

Data Cables: All data cables shall be Yellow Category 6A, consisting of 4 pair, 24 AWG copper, 8 pos, 8 conductor.

Station Outlets: Classroom Category 6A communications outlets shall consist of a single gang faceplate with three non-keyed RJ45 modular to 110 type inserts. Classrooms will have three of these communication outlets per room to be located on opposite walls. One outlet is incorporated into the Digital Display detailed elsewhere in this document.

WAP Outlet: Install two Category 6A communication cables outlet per classroom. The cables are to be located in the center of each room, terminated with a non-keyed RJ45 modular to 100 type insert, coiled with 20' of slack and tie wrapped to the ceiling structure one foot above the ceiling. Place the following label ("WAP-Room #") on the ceiling grid where the cables are located using a machine generated label. Install two Category 6A communication outlets (each with two cables) in the administrative area, cafeteria, and gymnasium. The cables are to be located at opposite ends of each building/room, terminated with a non-keyed RJ45 modular to 100 type inserts, coiled with 20' of slack and tie wrapped to the ceiling structure one foot above the ceiling. Place the following label ("WAP-Room #") on the ceiling grid where the cable is located using a machine generated label. If the structure is built with an open ceiling, the WAP outlets are to be installed on sidewalls at the same level as the ceiling support structure.

Grounding Bus Assemblies: Provide ground bus assembly with lugs in each communication closet and to every equipment and relay rack.

There are to be no floor communication outlets.

All office and storage rooms shall have one Category 6A communication outlet consisting of a single gang faceplate with three, non-keyed, RJ45 modular to 110 type inserts.

Each Cafeteria Manager's office shall have one, Category 6A, single gang faceplate communications outlet with three non-keyed RJ45 modular to 110 type inserts. Each Cafeteria point of sale (POS) station location shall have one, Category 6A, single gang faceplate communications outlet with two non-keyed RJ45 modular to 110 type inserts. All station cables are to home run to the closest Communication Closet.

The Custodian's Office shall have one Category 6A single gang faceplate communications outlet with three, non-keyed, RJ45 modular to 110 type inserts.

Each Mechanical Room shall have one Category 6A single gang faceplate communications outlet with three, non-keyed, RJ45 modular to 110 type inserts.

Modular jacks shall have a 45-degree downward tilt and shall be interchangeable with removable circuit labels. All jacks shall be white in color and be labeled at both ends.

Location of communication outlets will be determined by the IT Department and are not to be located under Digital Displays, next to sinks, or within five feet of doorways. Duplex electrical outlets shall be installed next to every communications outlet. Electrical outlets are needed next to the ceiling "WAP" outlet for additional technology.

Self-supporting 19" x 7' tall freestanding racks, having standard EIA hole pattern on front and rear flange with overhead support cross members and front mounted wire management panels.

Contractor will provide 20 - 12-24 pan head mounting screws with each rack for the mounting of electronic equipment.

Contractor shall provide one, multi-outlet, surge protected receptacle strip for each rack. Unit shall be 19" rack mount, six outlets, and circuit breaker with 6'-0" line cord.

The contractor will install a 7' high, 4 post server rack in the MDF next to the equipment racks to include two front and two rear adjustable rail tracks for the mounting of servers. The rack will be securely mounted to the floor and grounded to the building system.

Contractor shall provide ladder type cable runway tray sections and accessories in all communication closets.

Provide one 19" equipment shelf for each rack.

Each communication outlet shall have a permanent label on the outlet faceplate and the patch panel jack. Port labels shall also be permanently attached to the UTP cables at both ends. Brother P-Touch tape marking system labels are acceptable. Hand written labels are not acceptable. The following scheme shall be used in the labeling process:

Communication Closet (CC) Room Number

Position on Patch Panel

For example, Classroom # 212 has 3 Cat 6A cables that terminate in Closet # 245.

The Classroom outlet would be labeled:

CC245 (Communication Closet room number)

9 - 10 – 11 (corresponding positions on the patch panel)

The Communication Closet would be labeled:

212-9 212-10 212-11

(212 is the Classroom number & 9–10–11 are jack identification numbers)

The communication closet patch panels will be labeled above each port with the room number each jack services and will correspond with the jack in each room.

Each patch panel shall be labeled sequentially from left to right, top to bottom with the room number and port number such that the ports can be located easily on the panel.

All fibers in each fiber optic cable shall be identified at each end on the interconnect cabinet with permanent plastic labels. Fiber cabinets shall be identified with the building number, room number and corresponding fiber number for the far end of the cables.

Every portable in the District used for instructional purposes will have the following network communication infrastructure and will be equipment and designed as follows.

No cable splices will be allowed outside the termination locations described in this document or on the prints.

All cables will be labeled on both ends with clear permanent machine generated labels matching the numbering plan indicated herein.

Provide and install a Hubbell REbox (Commercial Remote Equipment Cabinet) model RE2 inside each portable next to an electrical outlet. Determination of the mounting location will vary depending on the design of each portable and must be approved by the SDMC Network Services Manager prior to installation.

Install a 1" steel conduit pipe to be run from the RE2 cabinet to the exterior of the portable and terminate into a NEMA 3 weather proof 8" x 8" x 6" J Box with an accessible cover. The pipe will be fastened to the portable so the pipe cannot move.

Install two, separate inner duct conduit pipes exiting the bottom of the J Box and buried in the ground to terminate into a 12"x 18" pull box installed near each portable. One pull box can be shared by multiple portables if the distance between the pull box and the portable is not greater than 30 feet.

Install two, separate 1" conduit pipes buried at least 12" deep from the pull box to either an exterior weatherproof cabinet mounted at least four feet up on a backboard or a larger buried pull box at least 2 feet x 2 feet. The type of termination required will vary from site to site and will be determined by Owner.

Install two, separate 2" conduit pipes buried at least 12" deep between the above determined location to the closest permanent buildings Communication Closest.

Install a two-strand fiber optic cable which is suitable for underground installation between each portable's RE2 cabinet and either the external backboard cabinet or building communication closet.

Install a 4-conductor 20 AWG P.A. cable with 1-pair shielded and a drain wire (West Penn 359 or equivalent) between each portable's RE2 cabinet and either to external backboard cabinet or building communications closet which has available P.A. circuits.

Labeling shall be as follows; each pair of fiber in the permanent buildings communication closet will have a label that denotes the portable # in which each pair of fiber is terminated. The portable will have a label on the fiber denoting the permanent buildings communication closet room #.

PORTABLE INTERNAL WIRING

Install three communication outlet boxes on opposite walls in each portable and located next to power outlets. Determination of the mounting location will vary depending on the design of each portable.

Each outlet will have three Category 6A cables contained in each outlet box. These cables are to be run inside the walls if possible; otherwise they can be run on the interior surface of the finished wall, into and above the drop ceiling space and down the wall into the RE2 cabinet.

Terminate all cables onto Cat 6A patch panels located inside the RE2 cabinet and label both ends of all cables. Install cable wire mold over all exposed cable runs inside the portable.

Contractor shall be responsible for providing a complete, functional data communications systems. All needed infrastructure including but not limited to conduit, ground pull boxes, racks, cabinets, termination panels, outlets and cabling are to be provided by this Contractor. Coordinate all requirements with other trades prior to submitting shop drawings. The Contractor shall provide for 20% growth on patch panels and punch down locations.

The cabling plant shall consist of a Main Distribution Frame (MDF) and multiple Intermediate Distribution Frames (IDFs), as shown on the drawings. All conduit and cable interconnecting the MDF to the IDFs shall be a part of this scope. All network cabling shall be installed with a 25-year manufacturer's performance warranty for 10-Gbps. The system is to be constructed with all like components and the installing Contractor is to be certified in the installation of the system and its components (must be pre-approved). The system shall also include a 4" conduit with three inter ducts to be installed from the MDF to the main road public right of way along and terminated into a 2x3 pull box.

The installation shall include all (fiber optic and twisted-pair copper) cabling, connectors, jumpers, patch panels, vertical wire management (no horizontal), telecommunications outlets, and racks or cabinets. At least 50% (i.e., the lower half) of each rack shall be reserved for Owner provided electronics.

All fiber strands shall be terminated with LC connectors utilizing Fusion splicing and landed on the fiber interconnect patch panels. All copper station cables shall be terminated on patch panels (MDF / IDF end) and data communications outlets (work station end). Upon completion of installation, Contractor shall test all fiber and copper cable, record the test results and provide results to the District, as specified herein.

Install/terminate fiber from the MDF to every individual IDF building. These runs shall all be in a star configuration. These backbone cables shall all be dedicated direct links between the MDF and the IDF. Provide rack mount fiber and copper panels in all closets and mount all equipment on a rack or cabinet, as required by this specification or the drawings.

The Contractor shall rack-mount and patch all owner provided network equipment.

Contractor shall provide Category 6A cabling system.

The intended function of the data communications cable system is to transmit data signals from a central location to individual data outlet locations. Upon completion of the work outlined in this specification, the system shall be capable of supporting Gigabit Ethernet data signals per IEEE 802.3ab, IEEE 802.3z, IEEE 802.3ae, and 1.2 Gb/s ATM. Fiber optic cable shall be laser or Vertical Cavity Surface Emitting Laser (VCSEL) optimized.

FIBER OPTIC CABLING

A. It is the intent that the inter-building fiber optic cabling, installed on this project, accommodates the data, fire alarm, HVAC controls, and surveillance systems. Fibers dedicated to these systems shall be labeled as to their use. All high school construction projects shall have fiber run to the sports field press boxes for phone and data communications.

B. All OSP fiber cable that is run 50 feet or more inside a building shall be installed in no less than two inch GRC above ceiling from entry point to termination point. Provide 20 foot slack loop at each closet termination end. Cable is to be homerun (i.e., no splices or cross patching through IDFs).

C. Outside Plant Fiber – Multi-Mode

1. Provide for inter-building backbones: loose tube, gel filled, moisture proof, outside plant, multi-strand, multi-mode fiber optic cable. Provide 50/125 and in quantities indicated on drawing interconnect diagram. Multimode fiber strands shall be optimized for VCSEL based systems. Fiber strands shall exceeded TIA/EIA 568-3.D and IEEE802.3z specifications. All fiber shall be installed with pull strings for future use. See drawings for number of fibers per cable.
2. Approved Manufacturers:
    a. Commscope Systimax LazrSPEED® 300: O-0xx-LN-5L-F12NS/25T (OM3). Provide counts per drawings.
    b. Pre-Approved Equal.

D. Indoor Plant Fiber – Multi-Mode

1. Provide for intra-building backbones: gel-free, inside plant, multi-strand, multi-mode fiber optic cable. Provide 50/125 and in quantities indicated on drawing interconnect diagram. Multimode fiber strands shall be optimized for VCSEL based systems. Fiber strands shall exceeded TIA/EIA 568-3.D and IEEE802.3z specifications. All fiber shall be installed with pull strings for future use. See drawings for number of fibers per cable.
2. Approved Manufacturers:
    a. Commscope: R-0xx-DS-5L-FSUAQ (OM3). Provide counts per drawings.
    b. Pre-Approved Equal.

FIBER OPTIC CABLING CONNECTORS

A. Provide small form factor, fiber optic connectors at each end of all fibers installed. Ferrule material shall be zirconia ceramic and pre-radiused. Each installed connector shall not exceed –0.1 dB/0.5 dB per connector pair. Provide connector protectors at each connection point to prevent accidental damage to connectors (dust covers). Terminate fiber on “LC” duplex connectors appropriate to fiber type, in quantities indicated on drawings.

1. Approved Manufacturers:

a. Corning Unicam or Pre-Approved Equal.

B. Protect all 250 µm fibers with cable end kit and fan out tubing kit or breakout jacketing kit.

1. Approved Manufacturers:

a. Corning or Pre-Approved Equal.

FIBER OPTIC CABLE INTERCONNECT DEVICES

A. Fiber Optic Interconnect Cabinets (Rack-Mounted)

1. Rack Mount Fiber Enclosures shall be constructed of code gauge steel protecting fiber terminations on all sides. Cabinets shall install in a 19" data rack with standard EIA hole spacing.

3. Provide hinged, removable front and rear doors with drawer that slides forward and backward.

4. Patching compartment shall be accessible through a hinged rear mounted cover (removable).

5. In quantities required, provide ports with "LC" type duplex couplers for multi-mode OM3 fiber optic cable. Cover empty slots with blank adapter panels, as applicable.

6. Cabinets shall be equipped with fiber optic splice trays and cable management. For transition to vertical cable managers, provide integral bend radius control.

7. Approved Manufacturers:

a. Systimax: G2 series optical fiber patch shelves. Quantities and blanks, as necessary: 50/125 µm MM Fiber, #360G2-1U-MOD-FX Cassette Shelf with #360DP-12LC-LS cassettes.

b. Pre-Approved Equal.

EQUIPMENT RACKS

A. Connect separate, solid, #4 AWG, insulated, grounding wire between the ground bus and the building's grounding system. Grounding Bus Assemblies: Provide ground bus assembly, 12" long (minimum) with lugs in each IDF / MDF closet and to every equipment and relay rack if not existing

B. Provide rack with mounting hardware and all accessories required to complete installation of the rack.

C. Provide Velcro tie wraps for cable management within racks. Nylon tie wraps shall not be used within racks.

D. Relay Racks and Frame

1. Relay racks and frame shall be height, as specified, and provided with EIA 19" mounting.
2. Securely mount to floor (on an isolation pad and utilize non-conductive washers) and provide ladder rack/attachment hardware, at no less than 12" width, with required front and rear clearances.
3. Provide 12-24 pan head mounting screws with each rack for the mounting of electronic equipment (i.e., switches) in quantities corresponding to the installed number of patch panels (i.e., one switch to each patch panel).
4. Equipment shall be constructed of extruded aluminum or cold rolled steel with standard EIA hole pattern on front and rear. Finish shall be anodized black.
5. Acceptable Manufacturers:
    a. Chatsworth Products Model 48353-703 (Relay) and Model 15251-703 (Four Post).
    b. Pre-Approved Equal.
6. Per drawings, provide cable management system. Provide vertical cable channel guide panels with covers to handle all terminated cables, as per drawings. Contractor shall install all owner provided network equipment and patch all drops onto equipment in an orderly and neat fashion utilizing the minimum required cable lengths through the cable management system. Orderly and neat to be evaluated by the Owner/Engineer. Contractor shall redo to comply with Owner's opinion/aesthetics.
    a. Acceptable Manufacturers:
        1) Chatsworth Products, Evolution g1 35511-703 (Vertical) and Evolution 35441-702 (Horizontal).
        2) Pre-Approved Equal
7. Provide support for each rack/frame, as required. For required backboard, provide as manufactured by Pathway & Spaces, Inc. Backboard Kits or pre-approved equal.

8. Provide APC Smart-UPS X 3000VA Rack/Tower LCD 100-127V with Network Card SMX3000LVNC with APC Temperature & Humidity Sensor AP9335TH in the MDF Room. Install one L5-30 – 125V 30A electric outlet behind the network rack for the above UPS. If the school is to be used as a public shelter and is equipped with a generator, the Contractor shall provide backup power to this outlet in each MDF / IDF electrical outlet that is designated as a shelter space.

UTP HORIZONTAL CABLING

A. Provide color putty, plenum-rated, Category 6A compliant, unshielded twisted pair (UTP) copper cable with integrated pair divider with a flame-retardant PVC jacket. Cable shall contain thermoplastic insulated primaries to comply with Article 800 NEC. Coordinate final color of cable with Owner prior to ordering.

B. The Contractor shall inspect all cable prior to installation to verify that it is identified properly on the reel identification label, that it is of proper gauge, containing the correct number of pairs, etc. Damaged cable, or any other components, failing to meet specifications shall not be used in the installation.

C. Horizontal runs shall not exceed the 90 meters including the patch cords and slack. If such an instance is identified by this Contractor (due to routing or other constructability issues), this Contractor shall notify the Engineer, prior to installation, in order to adjust the design to comply with standards.

D. Provide three feet of "s"-coiled cable above ceiling at each outlet location.

E. Acceptable Manufacturers:

1. Commscope Systimax 360 GigaSPEED X10D #2091B WH 4/23.
2. Pre-Approved Equal.

F. Any exposed cables shall be completely installed in black wire loom.

DATA JACK SYSTEM (T568B)

A. Recessed Mount—Provide faceplate and specified number of eight position eight conductor connectors in a four port configuration. The jacks shall individually snap-in to faceplate from the back of the faceplate. There shall be no front access to the jack termination once faceplate is secured to back box. Data outlet shall provide compliance with TIA-568-0.D, 568-1.D, 568-2.D, and TIA-606-B specifications. Termination of

all jacks shall be 110-type insulation displacement connectors (IDC), T568B pin/pair assignment and shall utilize printed circuit board technology. Tilt RJ-45 jacks at 45 degree angle.

1. Acceptable Manufacturers:

    a. Commscope Systimax 360 GigaSPEED X10D Model MGS600-262 (760092429) (white) with M10L0262, M12L-262, M14L-262 and M16L-262 faceplate. Faceplate openings to accommodate jacks specified. Provide blanks, as necessary.

    b. Pre-Approved Equal.

B. Provide a communications outlet outside of the Cafeteria Manager's office just below the finished ceiling. The outlet needs to be located in such a way as to allow a chime or bell to be connected to it and for the sound to be heard by Food Service staff.

C. WAPs shall be located one foot above finished ceiling tile on Unistrut suspended from structure on all-thread and labeled. Provide biscuit termination with no less than 20 feet slack.

LABELING

A. Each cable shall be permanently labeled at both ends with the MDF or IDF Room Number, Patch Panel Number, and Patch Panel Port Number. The system identification administration shall meet the requirements of TIA 606-B.

B. Each box shall have a recessed designation strip with clear plastic cover for jack identification. Lettering shall be typed – not handwritten.

C. All fibers in each fiber optic cable shall be identified at each end on the interconnect cabinet with permanent plastic labels. Fiber cabinets shall be identified with the building number and corresponding fiber number for the far end of the cables.

PATCH PANELS (T568B)

A. Provide loaded, Category 6A UTP patch panels (rack mount) per TIA 568-2.D as verified by ETL. Panels shall have 110 IDC type to eight position eight conductor connectors with no exposed PC boards. Jacks

shall be manufactured with printed circuit board (PCB) and have T568B pin/pair assignment (unless otherwise noted on the drawings). Patch panels shall be provided with individual port and patch panel labeling identification areas and shall be labeled consistent with the data jack system labeling outlined in this specification.

B. Provide quantity to accommodate number of outlets indicated on drawings plus 20% growth.

C. Provide rear cable management and horizontal cable management guide either as an integral part of the patch panel or provide as a separate piece and station support bars.

D. The building and room number in which the patch panel resides shall be prominently displayed.

E. Patch panels shall be alphabetically labeled from top to bottom, left to right, beginning with the letter A and proceeding through the alphabet. Each port of each patch panel must be numbered and labeled with the originating jack identification using building, room, and jack designation.

F. Acceptable Manufacturers:

1. Commscope GigaSpeed X10D 1100GS6 Model 360-IPR-1100-E-GS6-2U-48 (760152595), quantities as indicated on the drawings.

2. Pre-Approved Equal.

FLOOR BOXES

A. In floor boxes, this Contractor shall provide face plates to accommodate connectivity, in quantities required. Provide blanks, as required.

FIBER JUMPERS AND PATCH CORDS

A. Fiber Jumpers

1. Provide one, fiber optic jumper/patch cord for each termination in each communication closet. Jumpers shall consist of two, 50/125 µm, multimode OM3 fibers; 2 meters long with type LC ceramic connectors on both ends. Refer to fiber specifications - this section.

B. Category 6A Patch Cords

Provide snagless, Category 6A compliant cords (with an RJ-45 8P8C jack on each end). One patch cord shall be provided for each end of each Category 6A link (i.e., two per link), as shown on the drawings, plus spares. Cords shall be installed by this Contractor.

a. Provide **yellow** patch cords in the following lengths (if lengths are not exactly as listed provide closest length, even if slightly longer):

- ❑ At closet: 40% - 3 feet, 40% at 7 feet, 20% at 10 feet.

  Provide 20% spare patch cords (Qty/Lengths: ½ at 3 feet and ½ at 7 feet).

- ❑ At station, 75% - 10 feet and 25% - 15 feet.

  Provide 20% spare cords per color (Qty/Lengths: ¾ at 10 feet and ¼ at 15 feet).

b. Approved Manufacturers:

1) Commscope Systimax GigaSPEED X10D 360GS10E Modular Patch Cord, CPCSSX2 (360GS10E) Series.

2) Pre-Approved Equal.

ZONED PAGING

A. This Contractor shall provide pre-cabling for speakers to be installed under Section 17a of this Manual.

B. Provide 10-foot coil of cable at each speaker location shown on drawings and at MDF/IDF prior to termination. The cabling shall be homerun from each speaker location to the appropriate IDF and terminated on patch panels or Buchanan strips for analog.

C. For exterior speakers, provide a 4 x 4 recessed box without plaster ring and with extension box.

D. For ceilings (plaster and tile), cut in and install backbox, run cable in conduit back to accessible area. For tile ceiling, support tile grid for speaker location from building. For ceiling mount, no excessive weight shall be borne by the ceiling tiles - provide straps or otherwise approved hardware for bar joist suspension, as needed.

E. The paging system shall be utilized for emergency announcements. All components shall meet UL, CSA, and FCC requirements.

F. Ensure conduit and junction boxes are installed accessible for maintenance or re-pulling wire.

MISCELLANEOUS EQUIPMENT

A. As per the needs of the installation, miscellaneous equipment shall be required at the Contractor's expense. It is the Contractor's responsibility to identify and bid all miscellaneous equipment necessary to provide a complete and properly functioning system.

B. All backboards shall be ¾" AC Grade plywood painted on all sides with gray flame retardant paint as manufactured by Pathway Spaces, Inc. Backboard Kits or pre-approved equal. Label shall be visible.

MULTI-MODE FIBER TESTING (TO BE SUBMITTED AT SUBSTANTIAL COMPLETION)

A. TESTING: Contractor shall test each fiber strand and each pair of each twisted-pair copper cable. The Owner/Engineer reserves the right to have a representative present during all or a portion of the testing. A testing schedule shall be planned and agreed upon beforehand.

1. FIBER-OPTIC BACKBONE CABLE: Each fiber in every backbone cable run shall be tested with a optical light source and power meter as manufactured by Noyes Fiber Systems or HP/Agilent Technologies. Each multimode fiber shall be tested at both 850 and 1,300 nm. Maximum fiber strand attenuation shall be determined using the following link attenuation equation:

2. Maximum link attenuation =

   Connector attenuation + Cable attenuation + Splice attenuation

3. Maximum attenuation per component:

   Connector attenuation 0.75dB/1 mated connector pair

   Cable attenuation 3.5dB/km @ 850nm and 1.5dB/km @ 1300nm

4. Contractor shall calculate the acceptance values for each fiber strand based on the above criteria. The fiber certification report shall be submitted listing the power loss budget dB value, the measured

dB loss, and the dB margin of each measured fiber strand to the acceptance values per test limit: TIA Backbone Fiber Standard 568C.

B. Backbone lengths shall be verified with an OTDR or Light Source/Power Meter with length based standard testing as manufactured by Noyes Fiber Systems, Agilent, or pre-approved equal. Per this specification, maximum distance shall not exceed 500 meters to support LAN equipment operating at 850 nm and 1,000 meters to support LAN equipment operating at 1300 nm. Optical power meter and OTDR results shall be in the form of tester report print outs, handwritten results will not be accepted. Photocopies of test results will not be accepted; only original signed print outs will be accepted. These results shall be submitted to the Engineer.

1. Fiber backbone test results shall include:

    a. Wavelength
    b. Fiber Type
    c. Cable Length
    d. dB Loss
    e. Power Loss Budget for measured cable length
    f. Loss Margin
    g. Continuity
    h. Attenuation Specification
    i. Bandwidth Specification
    j. Fiber and Cable Number
    k. Measurement Direction
    l. Reference Set-up
    m. Test Equipment Model and Serial #'s
    n. Test Date
    o. Operator (Crew Members)

HORIZONTAL COPPER TESTING (TO BE SUBMITTED AT SUBSTANTIAL COMPLETION)

A. TESTING: Contractor shall test each horizontal, twisted-pair, copper channel. The Owner/Engineer reserves the right to have a representative present during all or a portion of the testing. A testing schedule shall be planned and agreed upon beforehand.

1. HORIZONTAL UTP CABLE: Each horizontal cable run shall be tested for all frequencies from 1 MHz to 550 MHz. The test shall be a channel configuration which includes the patch cord, patch panel, UTP cable, workstation jack, and workstation cord. The cable tester shall be set for channel parameters before testing. Each Category 6A cable shall be tested using a Level IIIe tester compliant with TIA specifications for testing of Category 6 configurations with the latest software upgrade available at time of bid. Tester shall be consistent with the manufacturer's requirements for hardware and software for a certified system and shall be based on compliance with TIA requirements. No tester shall be approved without meeting these requirements. Prior to testing UTP runs, the tester shall be calibrated per manufacturer's guidelines. Contractor to submit documentation of calibration upon request. The correct cable NVP shall be entered into tester to assure proper length and attenuation readings. Category 6 test results shall be in the form of tester software print outs. Photocopies shall not be accepted, only original signed reports shall be accepted. Test results shall be furnished to the Engineer.

2. Category 6A UTP cable testing shall include:

   a. Cable Length

   b. Wire Map

   c. Insertion Loss

      1) Cable

      2) Connecting Hardware

      3) Channel

   d. Pair-to-Pair Near End Cross Talk (NEXT) Loss

      1) Cable

2) Connecting Hardware
3) Work Area, Equipment, and Patch Cord
4) Channel

e. Power Sum NEXT Loss
1) Cable
2) Channel

f. Pair-to-Pair Equal Level Far End Cross Talk (ELFEXT)
1) Cable
2) Channel

g. Connecting Hardware Pair-to-Pair FEXT loss

h. Power Sum ELFEXT
1) Cable
2) Channel

i. Return Loss
1) Horizontal Cable
2) Connecting Hardware
3) Work Area, Equipment, and Patch Cord
4) Channel

j. Propagation Delay
1) Cable
2) Channel

k. Propagation Delay Skew

1) Cable

2) Channel

l. LCL (Longitudinal Conversion loss)

1) Cable (in both directions)

2) Connecting Hardware

2. MULTI-PAIR UTP BACKBONE CABLE: Each pair shall be tested from termination block in MDF to termination block in IDF for continuity.

DOCUMENTATION

A. Contractor shall provide documentation to include test results and as-built drawings. Drawings shall be developed in CAD (i.e., AutoCAD 2014 or higher). The following documents shall be provided to the Engineer:

1. Each MDF and IDF shall contain a copy of that building's as-built drawing affixed to an adjacent wall or located in an interior pouch for quick reference. Revised rack and equipment cabinet elevations shall be provided including serial numbers of all installed equipment.

2. Three sets of black line, as-built drawing sets.

3. Provide USB drive reflecting all the work with actual device and equipment locations. Drawings to be submitted in .dwg or .dxf and pdf format.

B. Provide the testing results database on USB for the completed job (i.e., fiber and copper). The USB thumb drive shall include the software tools required to view, inspect, and print any selection of test reports.

1. Additionally, provide one hard copy of the fiber optic cabling test results and one hard copy of UTP cabling results. These results shall be submitted to the Engineer prior to the Contractor calling for substantial completion inspection.

2. Provide each communications room with its own notebook containing the corresponding test reports for both the fiber and copper cabling. Each notebook shall have a clear front pocket and be labeled with that communications room's designation.

C. Provide a bill of materials of all installed equipment and wiring, rack, and backboard equipment layouts showing placement of support equipment, and model and serial numbers of all installed equipment.

ACCEPTANCE

A. Acceptance of the Data Communications System, by the Owner and the District's Technology Department, shall be based on:

1. Copy of all test results.

a. All fiber segments and all workstation data cables must meet the criteria established in section above. The Contractor is responsible for additional fiber strands and UTP cable to be installed if any show defective during testing.

2. Copy of as-built drawings shall contain the following.

a. Changes and/or deviations from the construction (bid) prints.

b. All communication outlet addresses and locations.

c. Horizontal cable routing.

d. Backbone cable routing.

TRAINING

Provide a minimum of two site personnel with training on the network cabling system for up to two hours on site. Training shall cover the location labeling scheme, documentation structure and contents, documentation orientation, and system reconfiguration (i.e., reassignment of Communication Outlet function via patching). Training shall take place at time of Substantial Completion before building is occupied by Owner.