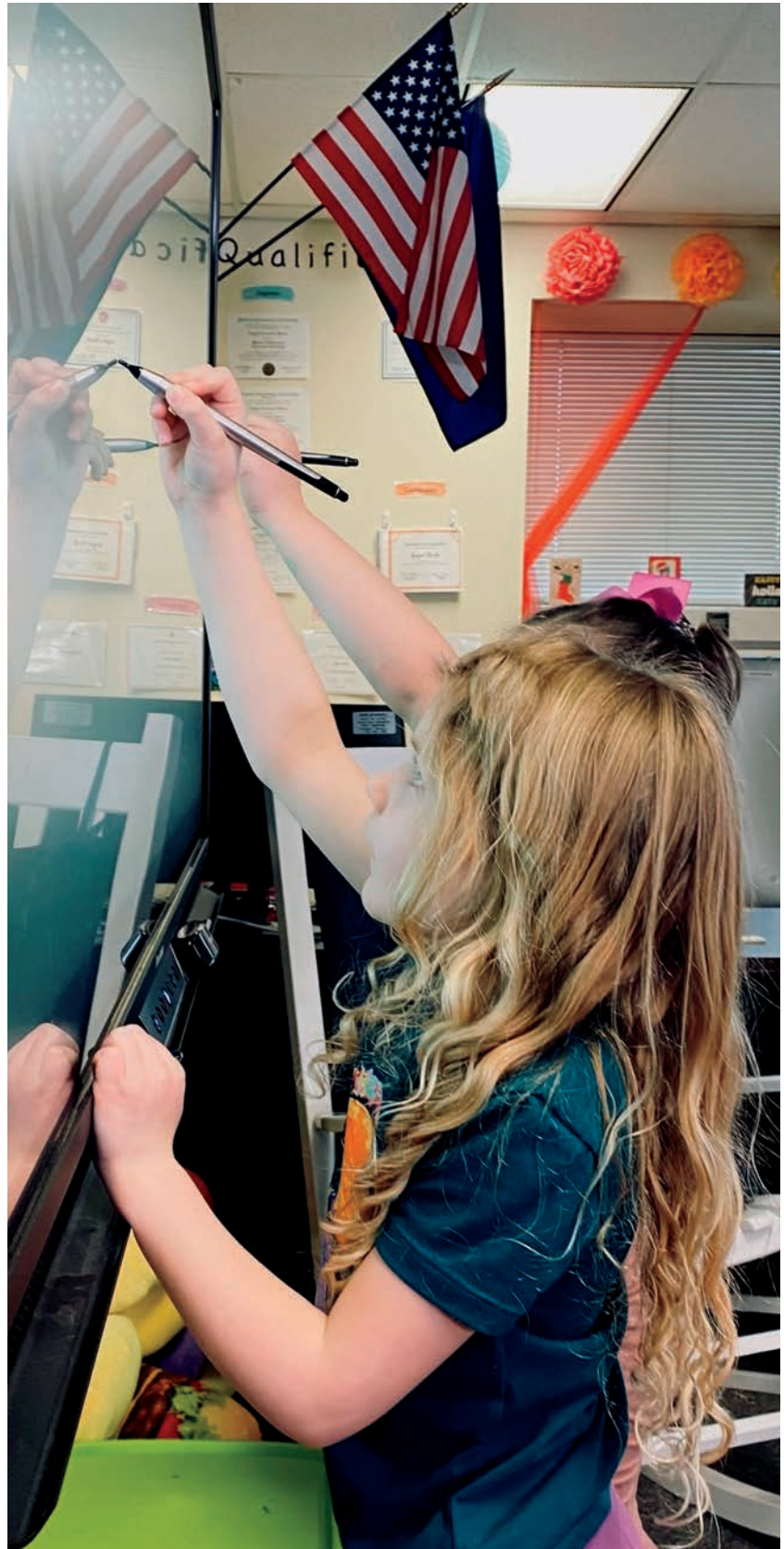# Technology Plan

FY 2023 - 2027

Contents

1.0 PURPOSE

1.1 Purpose

The Matanuska-Susitna Borough School District (MSBSD) Technology Plan demonstrates the purposeful support of technology which permeates every aspect of modern education. Student learning must be at the center of all technology related initiatives with a strong, positive correlation between leadership, teaching, and assessment. To support a dynamic learning environment, there must be a network of resources, high levels of accessibility, usable devices, and seamless connectivity so learning is not place based but everywhere, all the time.

The Technology Plan is a living document that will evolve over time. The plan will be adapted as the District implements new and exciting ways to engage students in the use of technology.

"The MSBSD mission is 'to prepare all students for success' and the students of today live in an integrated world of technology. To meet our mission, it is essential that we provide access and instruct students in the skills and tools of today so they are ready for tomorrow. Technology allows our students continuity of learning, access to up-to-date information, improves collaboration and accommodates multiple learning styles. Our world is ever changing and we are committed to providing a relevant and informed education for all students."
Dr. Randy Trani, MSBSD Superintendent of Schools

2.0 INTRODUCTION

2.1 Background

Leveraging the power of technology to rethink education is a challenge, decades in the making. The evolution has taken us from a place of device acquisition and learning how to use specific technologies to teaching practices and how using technology can support learning in transformative ways. Initially published in 1996, with revisions occurring every four to six years, the U.S. Department of Education: National Education Technology Plan (NETP) serves as the guiding policy document for States and local districts to navigate this rapidly evolving tech landscape.

Acknowledging the diverse needs and roles of stakeholders (educators, students, leaders, families) and the limitations of NETP as a policy document; organizations, states, and districts have collaborated to create more specific and measurable outcomes specific to their role(s) in education. The International Society for Technology in Education (ISTE) is a non-profit organization providing educational resources that capture the essential conditions necessary to effectively leverage technology for learning. Building on the work completed by ISTE, the Alaska Department of Education & Early Development has adopted the Alaska Digital Literacy (ADL) Standards; a collaborative undertaking that included several educators from the Mat-Su.

As the Matanuska-Susitna Borough School District (MSBSD) begins to navigate the educational landscape following the COVID-19 pandemic, one takeaway has become clear: MSBSD has the tools and resources to maintain a continuity of learning, regardless of the time of day, or location where learning takes place. Partnering with resources like NETP, ISTE, and ADL standards, and through the development of the MSBSD Technology Plan, we aim to create an equitable and accessible learning ecosystem for years to come.

3.0 WHERE WE'VE BEEN

3.1 Where We've Been, 2015 - 2019

Since 2015, the Mat-Su Borough School District has steadily pursued a district-wide 1-to-1 program. District administrators and school board members visited 1-to-1 school districts in Kent, Washington and Tucson, Arizona in 2015 and 2016, respectively. These site visits were instructive and led to the development of a technology roadmap, clarity around the type of student device (Chromebook), improvements in supporting technology on a larger scale, and the District's first ever Tech Expo in 2016.

During the 2015-2016 school year, the Mat-Su Borough School District developed a five-year technology roadmap aligned with school board objectives. The technology roadmap was developed by improving collaboration for classroom technology decision making. The idea was to involve more than just the IT Department when selecting devices, so the District turned to the following/programs for input:

- IT and Office of Instruction working groups
- Technology Advisory Committee (TAC)
- Pilot programs and evaluations
- Early adopters
- Change management process
- Vendor meetings and device testing's

MSBSD continued to expand technology in classrooms by refreshing equipment and increasing the number of student devices. In early 2016, the District supported a 1-1 Chromebook pilot program at Colony High School. The program generated excitement throughout the District. Other schools followed suit, purchasing additional Chromebooks to meet growing demand by teachers and students, alike.

During the 2017-18 school year, the District moved forward with another Chromebook pilot program at Su-Valley Jr./Sr. High School. Following yet another successful pilot program, the District introduced the Rural Enhanced Access Initiative in the 2018-19 school year. The Initiative allowed schools that were the most remote and economically disadvantaged to be the first adopters of blended learning strategies. With limited funding, the District continued to pursue innovative and resourceful ways to increase access to technology for students at all schools.

3.0 WHERE WE'VE BEEN

3.2 Where We've Been, 2020 - 2022

With the onset of the COVID-19 pandemic during the spring of 2020, the District was positioned well for an unexpected transition to remote learning. Within a matter of weeks, 8,000 devices were issued to students and teachers were prepared to deliver online instruction during the Statewide school closure.

During the 2020-21 school year, the District implemented another pilot program: non-touch classroom displays. Unlike previous pilot programs, the non-touch displays proved challenging for teachers. The non-touch display was more cost effective than interactive displays; however, the non-touch classroom displays did not support consistent wireless connections or mobile annotation. By the end of the 2020-21 school year, the District utilized CARES Act funding to purchase 70" interactive touch screen displays in over 700 classrooms, achieving a consistent district-wide standard.

In the summer of 2021, the community was surveyed for Elementary and Secondary School Emergency Relief (ESSER) spending priorities. In this community survey, classroom technology ranked second behind maintaining class sizes. Additionally, parents were surveyed during the summer of 2021 to comply with data collection requirements in the American Rescue Plan Act. Results showed that 7% of students had no internet access and 45% of students did not have access to a dedicated device for at-home learning (section 3.4). The survey results reinforced the need and importance for the District's ongoing investment in classroom technology.

The Mat-Su Borough School District formed an Instructional Advisory Committee in the spring of 2022 comprised of educators, industry leaders, and students. The Instructional Advisory Committee collaborated with District leaders to inform the role technology plays in the continuum of student learning, so Mat-Su graduates are prepared for success.

Leveraging federal pandemic relief, the District will be embarking on an exciting new era of student learning. The first ever district-wide 1-to-1 take home program will launch in the fall of 2022, where students in Kindergarten through 2nd grade classrooms will have 1-to-1 access during the school day and students in grades 3-12 will be issued a take-home device. Eclipsing the traditional classroom constraints of time and place, student learning will occur anytime, anywhere for MSBSD students.
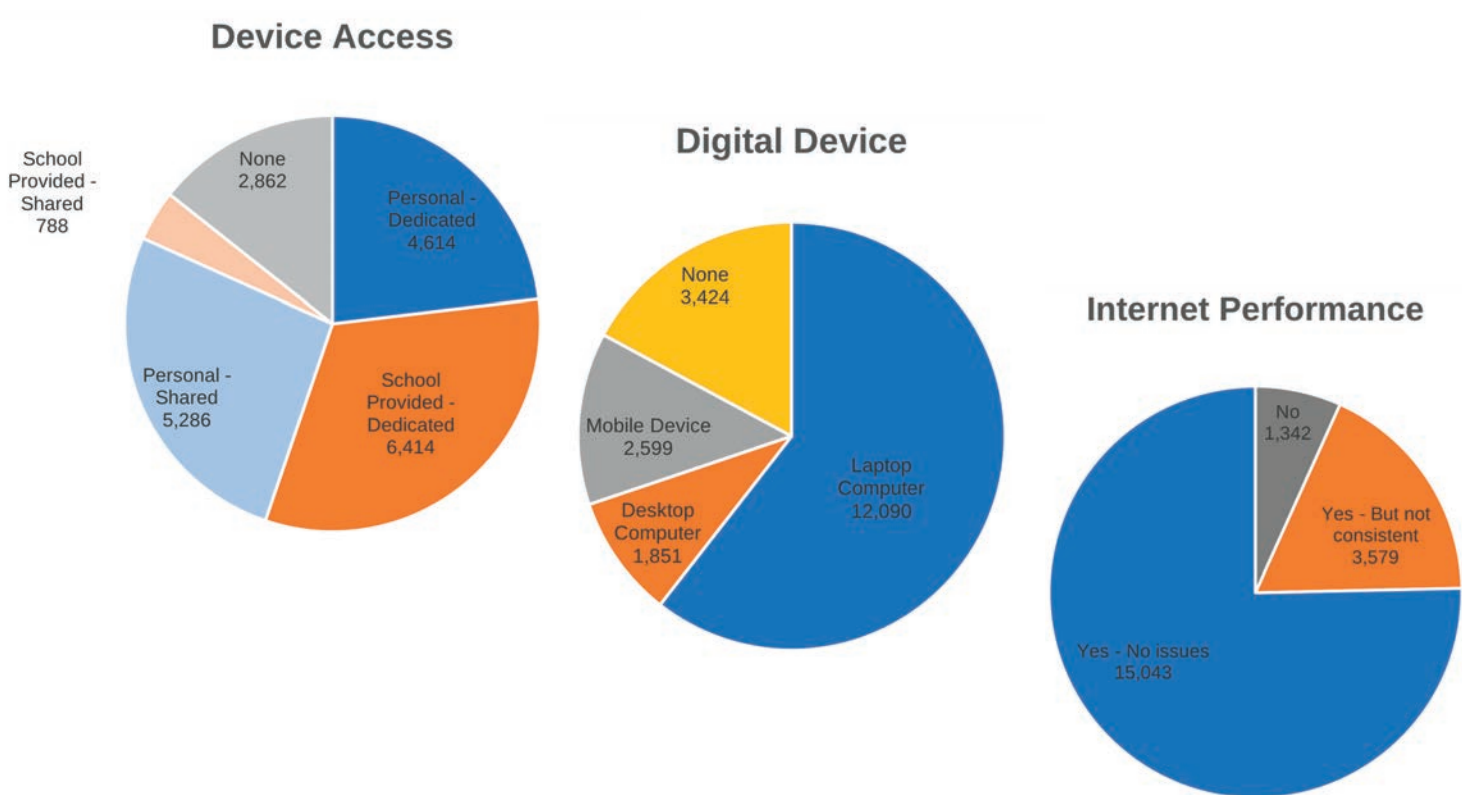
3.0 WHERE WE'VE BEEN

3.3 Technology Timeline, 2015 - 2022
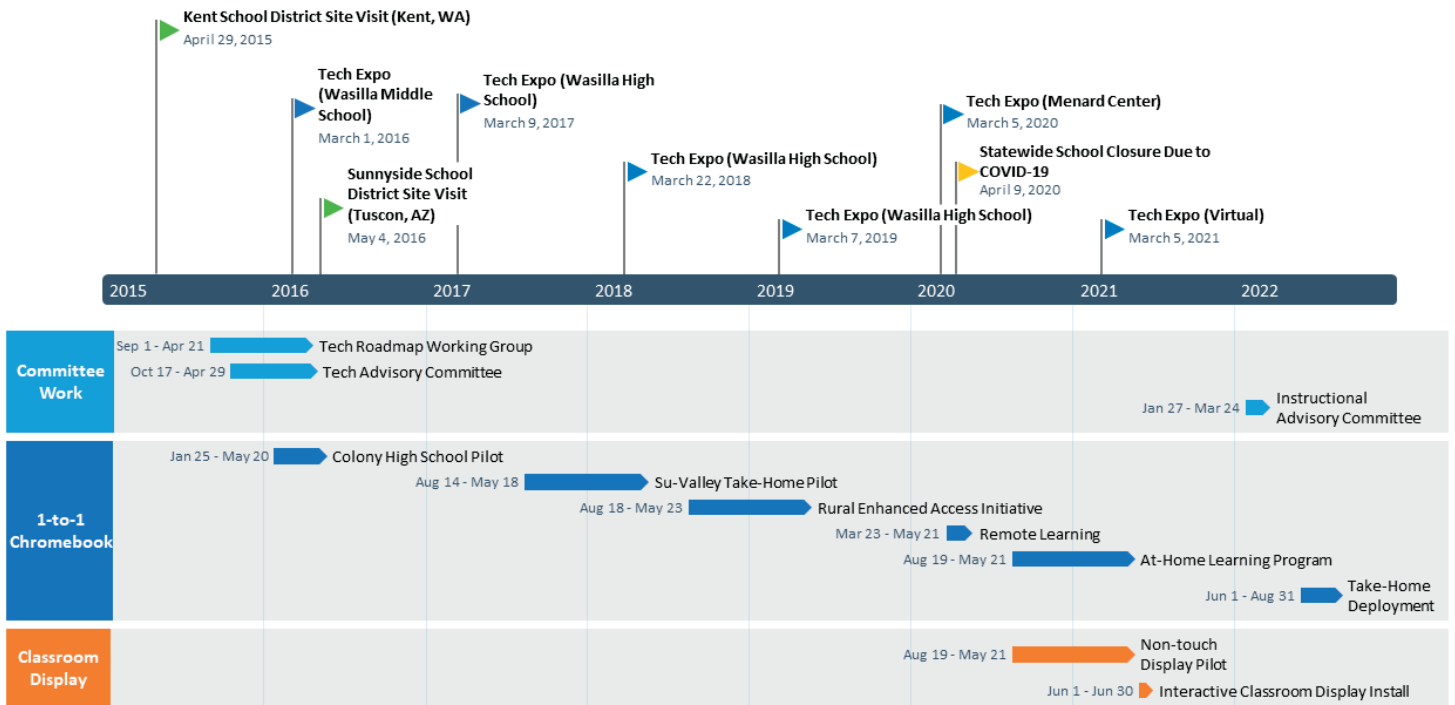
3.4 Home Connectivity Survey 2021

4.0 INSTRUCTIONAL FOCUS AREAS

4.1 Safety & Citizenship

ISTE Educator: *2.3*   **ISTE Leader:** *3.1, 3.4*
Alaska Digital Literacy Standards: *Digital Citizenship (multiple), Knowledge Construction (multiple), Global Collaboration (multiple)*

Learning is no longer limited to the brick-and-mortar schoolhouse. Students can access their digital learning environments whenever and wherever they choose. Ensuring safe and equitable access to education is a top priority for MSBSD. Classroom management, device filtering, monitoring, and digital citizenship learning modules are integral to creating a safe online ecosystem. In preparing all students for success, MSBSD will help students recognize the rights, responsibilities, and opportunities of living and learning in a digital world.

Students and teachers must act and model the safe, legal, and ethical use of technologies and intellectual property. MSBSD believes that a single place, program, or individual in a building cannot accomplish this; but rather is achieved through concerted, building-wide efforts involving all stakeholders.

4.2 Learning Environments

ISTE Educator: *2.4, 2.5, 2.6, 2.7*   **ISTE Leader:** *3.1, 3.3, 3.5*
Alaska Digital Literacy Standards: *ALL*

Personalized learning requires changes in how instructional time is used and how the learning space is designed. Reimagining our learning environments will include removing traditional pace, path, and time restrictions; while promoting innovative district calendars and master schedules. This flexibility allows MSBSD to adapt to the individual learner needs, interests, and preferences.

Future MSBSD classrooms are built with the Universal Design for Learning (UDL) in mind. UDL is a framework to improve and optimize teaching and learning for everyone, with the goal that students can access and participate in meaningful and challenging opportunities. The framework, part of the CAST organization, focuses on Engagement (the why), Representation (the what), and Action & Expression (the how) of learning.

4.0 INSTRUCTIONAL FOCUS AREAS

4.3 Instructional Practices

ISTE Educator: *2.1, 2.3, 2.4, 2.5, 2.6, 2.7*
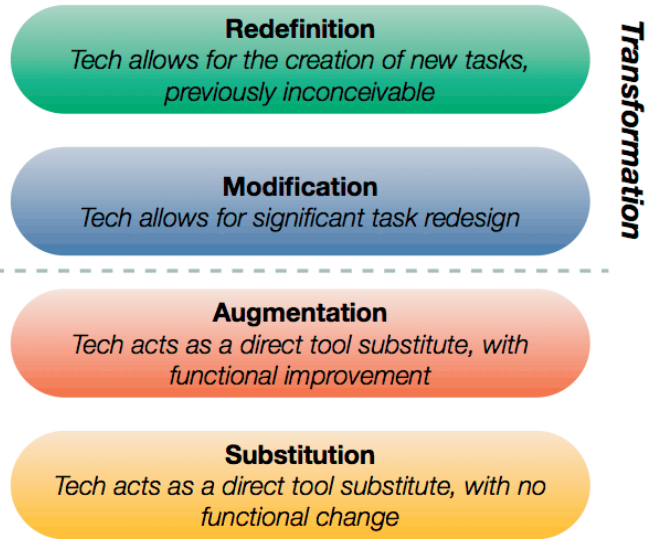**ISTE Leader:** *3.2, 3.3, 3.5*
Alaska Digital Literacy Standards: *Empowered Learning (multiple), Knowledge Construction (multiple), Creative Communication (multiple), Global Collaboration (multiple)*

While technology has and will continue to change, facets of education will remain constant: curriculum, instruction, and assessment are tightly aligned. Research suggests that technologies and computers are no more effective at teaching students than their human counterparts beyond low-level tasks. MSBSD believes that 21st Century learners and educators must enter a partnership that allows for learning with technologies, not from technologies.
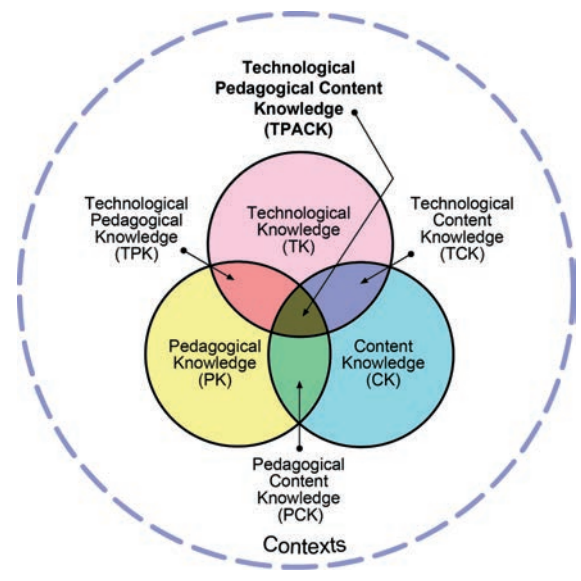
The use of technologies and digital tools should be purposeful. Aligning technologies to proven frameworks such as Bloom's Taxonomy or The Danielson Framework is aided by a parallel adoption of the SAMR model, the Technology Integration Matrix (TIM), or the Technological Pedagogical Content Knowledge Framework (TPACK). Using evidence-based frameworks that focus on both the science of teaching and learning and the function of technology, MSBSD educators will foster student engagement and promote a personalized approach to learning.

> *"…with tech readiness and remote learning…we need to create opportunities for practice…"*
> *Mary Fulp, MSBSD Principal*

SAMR Model

Redefinition
Tech allows for the creation of new tasks, previously inconceivable

Modification
Tech allows for significant task redesign

Augmentation
Tech acts as a direct tool substitute, with functional improvement

Substitution
Tech acts as a direct tool substitute, with no functional change

Transformation
Enhancement

TPACK

Technological Pedagogical Content Knowledge (TPACK)

Technological Pedagogical Knowledge (TPK)

Technological Knowledge (TK)

Technological Content Knowledge (TCK)

Pedagogical Knowledge (PK)

Content Knowledge (CK)

Pedagogical Content Knowledge (PCK)

Contexts

4.0 INSTRUCTIONAL FOCUS AREAS

4.4 Grade Level Outcomes

ISTE Educator: *2.4*   **ISTE Leader:** *3.2, 3.4*
Alaska Digital Literacy Standards: *All*

For students to thrive in an evolving technological landscape, a standardized progression of skills and courses is critical to ensure grade-level and post-secondary readiness. Standalone course offerings are not enough, and skill development must be integrated across all content and curricular areas.

Appendix 9.0 contains more information about MSBSD's framework for studying technology from Kindergarten through Grade 12. Grade-level outcomes in this document define minimum requirements in a fundamental and non-exhaustive progression. This progression is tightly aligned with the Alaska Digital Literacy Standards and the International Society for Technology in Education (ISTE) standards for students and emphasizes skills in a digitally connected world. These skills are part of everyday learning in most classrooms, especially in the elementary years. As students progress through middle school, there is increased intentionality. While these skills are still a part of every classroom environment, the opportunities for technologically-focused learning pathways and courses expand.

> *"…Digital skills presented in the first session are as universally needed as Reading, Writing, and Math...these can no longer be relegated to specialized learning pathways…"*
> *Ben Craig, Northrim Bank*

ISTE Standards

4.0 INSTRUCTIONAL FOCUS AREAS
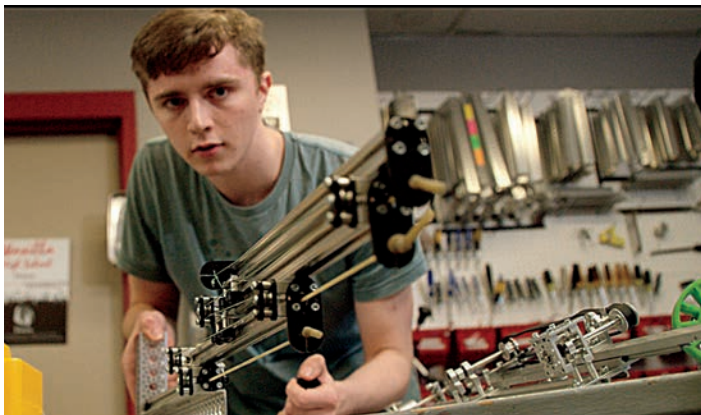
4.5 College & Career

ISTE Educator: *2.1, 2.2, 2.4, 2.5*   **ISTE Leader:** *3.2, 3.4*
Alaska Digital Literacy Standards: *None*

As part of our education and workforce development system, MSBSD must prepare young people for successful lives as adults, including satisfying careers that will allow them to achieve economic independence. This preparation should ready all students for success in all levels of post-secondary transitions, including college, advanced technical training, advanced entry into the workforce, apprenticeship, and military service.

Quality career development technologies play a crucial role in helping students develop their career and education plans. All students, teachers, and career development advisers should be provided equitable access to baseline technologies with industry-validated standards.

4.6 Professional Development

ISTE Educator: *2.1, 2.2, 2.4*   **ISTE Leader:** 3.1, *3.2, 3.3, 3.5*
Alaska Digital Literacy Standards: *None*

Technology and digital learning expand access to quality, ongoing, embedded opportunities for professional development (PD). Research and feedback from stakeholders, including the Technology Plan Advisory Committee, emphasize the need for professional learning to support certificated and non-certificated staff in the application of program or curricular technology, student use of technology in the classroom, and the alignment of teaching practices to both Alaska Digital Literacy and the International Society for Technology in Education (ISTE) standards.

Building on current practices, MSBSD will continue to regularly assess the needs of both certificated and non-certificated staff when developing annual professional development plans. Video conferencing tools, learning management systems, asynchronous modules, and vendor partnerships provide opportunities to grow PD participation and expand offerings throughout the calendar year. MSBSD will aid in the facilitation of ongoing and embedded PD opportunities by creating a structure for delivery that includes: The Summer and Fall PD academies (SAMS & FAMS), a continued partnership with the Alaska Society for Technology in Education (ASTE) as well as the University of Alaska Anchorage PACE program, micro-credentials, and the exploration of flexible school schedules and calendar models in future school years.

> *"The way I did things yesterday can't be the way I do them tomorrow."*
> *Jan Bulovsky, MSBSD iTech Coordinator*

5.0 CONNECTED CLASSROOM

5.1 Student and Teacher Devices

Student Device

Starting in the 2022-2023 school year, the District will be issuing a take-home device to all students in grades 3 through 12. The 1-to-1 student-to-device ratio will also be maintained for grades PK-2. However, devices for these grade levels will remain at the school unless they are needed to support remote learning. The standard student device is a Chromebook with an 11.6" touch screen and a protective case.

Teacher Device

All teachers are issued a Windows device, with the current standard being a laptop, docking station, and monitor. This package allows for mobility throughout the classroom and for take-home use in the event of remote learning days.

5.2 Classroom Displays

MSBSD classrooms are equipped with 70" interactive displays. Each display allows access to instructional tools and apps, can be used to mirror/project staff and student device screens for engaged learning and collaboration.

5.3 Environments (LMS)

MSBSD supports two different learning management systems (LMS): Google Classroom and Canvas. Both platforms create a central repository for course materials as well as providing a virtual space for teachers and students to collaborate. Each LMS integrates with the District's Student Information System (Synergy) to ensure grades are maintained and available for viewing by parents.

5.0 CONNECTED CLASSROOM

5.4 Classroom Management Systems & Filtering

The District's official classroom management system is GoGuardian Teacher, which allows teachers to monitor student devices while class is in session. Additionally, the District has acquired GoGuardian Admin which ensures 24/7 web filtering for Internet content, blocking access to obscene or harmful material. GoGuardian Admin also provides for a simple to use app that allows parents/guardians to monitor their child's Internet activity, limit hours for Internet browsing, and provides for additional web filtering outside school hours.

"Web filtering helps keep students on task and focused as learners, as well as keeping them safe."
GoGuardian Teacher

5.5 Student and Staff Accounts

MSBSD supports several enterprise level solutions and integrates these using both Google and Microsoft Office 365 for authentication. This allows all users to login using a single account to access integrated solutions. These connected accounts allow for efficient access to instructional tools such as; Clever, HMH Central, Lexia, Adobe and more.

6.0 SUPPORT SERVICES & ENABLING INFRASTRUCTURE

6.1 Internet / Wide Area Network (WAN)

The District maintains a dedicated 3 GB Internet circuit and a WAN comprised of fiber connections to all school sites. For frequently accessed resources such as educational materials, streaming media, and system updates; the District utilizes a caching appliance so content is stored locally, speeding up access to resources and decreasing demand on the Internet circuit.

6.2 Access Points (Connectivity)

Each classroom within the District is equipped with a minimum of one access point. There are over 1,600 access points, providing robust coverage throughout each school building. The District is also in the process of increasing connectivity to outdoor areas such as sports complexes, which ensures secure wireless throughout the campus.

6.3 Student Information System (SIS)

In 2019, the District selected Edupoint's Synergy product and began the implementation process for the enterprise level education platform. This solution includes, but is not limited to, the following:

- Online registration
- Lottery system for admission into select programs
- Teacher gradebook
- Parent and student mobile apps
- A variety of additional functionality including: academic and career plans, graduation progress tacking, scheduling, fee management, discipline, and data analytics

6.4 Support (Call Center, Knowledgebase, Site Support, DFRs)

A multi-faceted system of support has been established that includes a self-service knowledgebase, IT technicians, school staff assigned as Digital First Responders (DFRs), and district-level Call Center available Monday-Friday 7:00 am – 4:30 pm. The Call Center provides responsive support through phone, email, and chat.

6.0 SUPPORT SERVICES & ENABLING INFRASTRUCTURE

6.5 Information Security Program

MSBSD has a responsibility to protect sensitive data to include financial, employee, and student data, while allowing for a positive learning environment. The objective is to employ technology resources that create equitable and accessible learning systems that make learning possible everywhere and all the time. The District elected to develop and implement an Information Security Program (ISP) by utilizing the National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF). This framework will allow MSBSD to tailor associated security controls based on District risk tolerance. The following section will describe the framework and an outline of how it is to be implemented.

MSBSD recognizes an effective information security program is essential to protecting sensitive data and ensuring information technology enables a rich learning environment. District staff are responsible for recommending and implementing appropriate controls to adequately protect district information and resources. The information security framework employs a layered defense strategy with protocols to prevent, detect, and respond to potential threats. The core framework is implemented through a combination of department guidelines, operating procedures, checklists, hardware, and software. In addition, the District has developed and maintains a knowledge base that acts as a document and information repository for all district security related information. Administrative Regulation 3522 District Information Security Program, outlines the core governance framework for the ISP to include the following areas:

- IT Security Governance
- Network Security
- Endpoint Security
- Application Security
- Data Security
- Identity & Access Management

7.0 LONG-TERM GOALS

7.1 Instruction Goals

- The MSBSD will leverage technology to optimize the teaching and learning experience.
- The MSBSD will leverage technology to prepare students for 21st-century careers.
- The MSBSD will leverage technology to address real-world problems.
- The MSBSD will leverage technology to maintain continuity of learning for students and families.
- The MSBSD will leverage technology to help students and staff communicate, collaborate, create, and connect.
- The MSBSD will leverage technology to foster digital citizenship, digital safety, and responsible and thoughtful use of media and the internet among students and adults.

7.2 Information Technology Goals

- Launch 1-to-1 take home model for grades 3-12 and 1-to-1 in-school model for grades PK-2.
- Provide customized information security training to user groups with elevated access.
- Continue monthly security review to enhance the District's information security program.
- Design and deploy homeschool software enhancements integrated into Synergy SIS, replacing the current stand-alone solution.
- Implement new asset management solution to track the issuance, life cycle, and refresh of IT hardware.
- Website redesign with focus on accessibility, navigation, and responsiveness with mobile devices.
- Deploy at-home Internet filtering and enhanced safety alerts for students.
  - Develop coordinated response to online threats of harm.
- Provide parent app and how-to resources for additional filtering and monitoring capabilities.
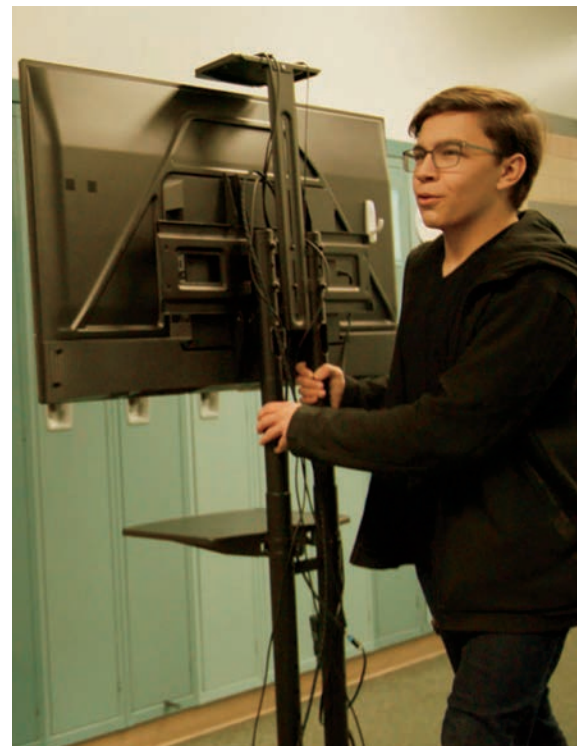
8.0 FUNDING PLAN

8.1 Classroom Technology (Student devices, cases, staff devices, and interactive displays)

In the fall of 2021, MSBSD's Board of Education made a major commitment to classroom technology, transferring $10 million from the District's Operating Fund to its Renewal & Replacement Fund. This transfer established a 5-year (2023-2027) funding plan for classroom technology, making it the first time a multi-year technology plan has received full funding by the District. In order to sustain the 5-year technology plan, a commitment of approximately $2 million will be needed, annually.
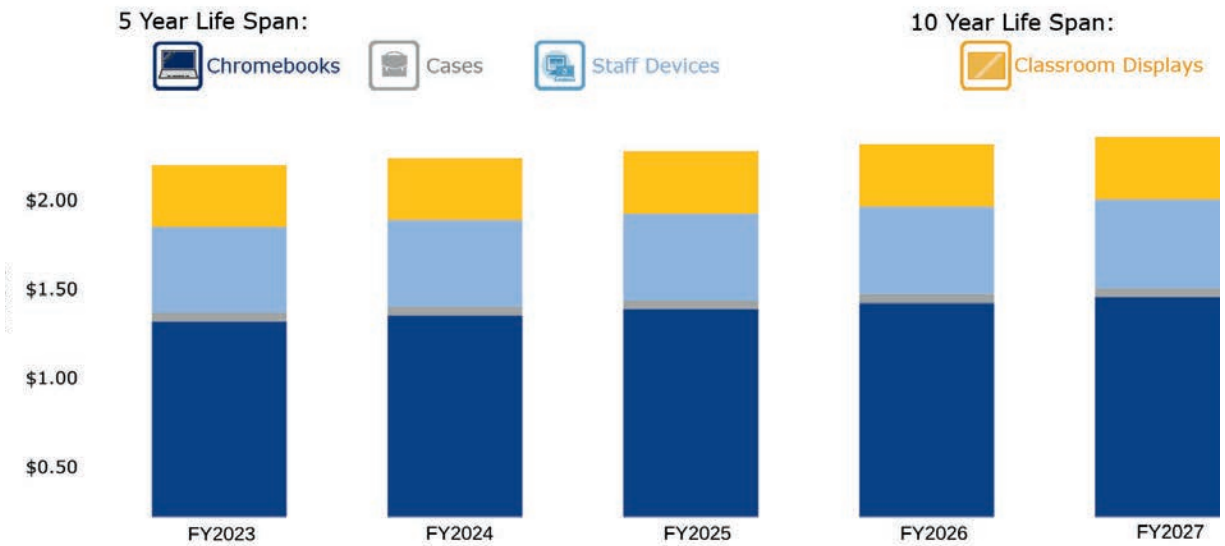
8.2 Enabling Infrastructure

Operating revenue, including E-rate funding, is used to purchase infrastructure hardware. Servers, network storage, security cameras, radios, telephony, and uninterrupted power supplies are resourced using General Fund dollars. E-rate Category 1 funds provide financial support for Internet and WAN connectivity, whereas E-rate Category 2 funds are used to support refresh of network switches and access points.

9.0 APPENDIX

9.1 MSBSD Technology Framework

Section 4.4 of the MSBSD Technology Plan outlines the need for a progression of technical skills required of 21st-century learners. The exposure to and mastery of these skills is tightly aligned to Alaska Digital Literacy, Alaska English Language, and Alaska Mathematics Standards. MSBSD's framework for studying technology from Kindergarten through Grade 12 can be found here.

The progression identifies which grade levels the skills should be **Introduced (I), Reinforced (R), and Mastered (M)** by students. Skills labeled as Optional (O) are left to the discretion of the school.

It is not the intention of MSBSD for these skills to be taught in a specific location or class in a building. Success in this area will require an integrated approach regularly reviewed with students. The 'Responsible Staff' column is a guide for deployment and monitoring student skills. **Librarians (Lib), Classroom or Content Teachers (CT), and 4C's** staff members are responsible for modeling, instructing, and monitoring student skills. Instructional Coaches, Tech Leaders (DFRs), and School Administrators are accountable for creating the deployment structure and training staff based on the unique circumstances in each of our schools.

Technology Plan Key Contributors:

Parent | Community | Industry
Jeremy Creech - VMware
Benjamin Craig - Northrim Bank
Denise Evey - Fred Meyer
Jessica Gilbert - Matanuska Telephone Association
Brian Tiefenbrun - Connect Mat-Su
Patrick White - Matanuska Electric Association

Student Safety
Elliott Peterson - Federal Bureau of Investigation
Steven Paine - MSBSD Safety & Emergency
Preparedness Manager

Mat-Su Educators
(Teacher | Librarian |
Instructional Coach | Counselor)
Kleigh Anderton
Jane Bulovsky
Chris Gooch
Janelle Maki
Brian Mead
Heather Rains
Josie Schubert
Jody Stewart
Sean Williams

Student Representatives
Palmer High School
Palmer Middle School
Mat-Su Career & Tech High School

Mat-Su Principals
Mary Fulp
Ryan Geagel
Greg Giaque
Juliana Hardy
JoAnn Hinds
Leigh Magnan

MSBSD Office of Instruction
Justin Ainsworth
Tomas Anderson
Carrie Day
Mikey Evans
Rhonda Hewitt
Ali Larijani
John Notestine
Colleen Walker
Trish Zugg

MSBSD Information Technology
Earl Almdale
John Bidney
Charles Chapman
Luke Fulp
Michelle Hoyt
Justin Michaud
Bill Stannard
Marianne Wick

MATANUSKA
SUSITNA
BOROUGH SCHOOL
DISTRICT