



TECHNOLOGY PLAN 2022 - 2025

Millbrook Central School District
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Board of Education

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Elliot García *Assistant Superintendent for Instructional Technology & Facilities*
Victoria Curry *Supervisor of Data Analytics & Professional Development*
Eric Seipp *Millbrook High School Principal*
Steven Cabello *Millbrook Middle School Principal*
Thomas Libka *Alden Place Elementary School Principal*
Michael Setaro *Elm Drive Elementary School Principal*

District Technology Committee

Member	Title/Position	Building	Parent in District
Laura Mitchell	Superintendent of Schools	District Office	No
Caroline Hernandez Pidala	Deputy Superintendent	District Office	No
Elliot García	Assistant Superintendent	District Office	No
Victoria Curry	Supervisor of Data Analytics & PD	District Office	No
Eric Seipp	Principal	High School	No
Steven Cabello	Principal	Middle School	No
Thomas Libka	Principal	Alden Place	No
Michael Setaro	Principal	Elm Drive	Yes
Perry Hartswick	Board of Education (President)	BOE	No
Chris Rosenbergen	Board of Education	BOE	Yes
John Ahern	Teacher / MTA President	Middle School	No
Jillian Barnes	Teacher	Middle School	No
Rosalie Carey	Teacher	Alden Place	No
Dawn Harkenrider	Teacher	Middle School	Yes
James Eades	Helpdesk Technician	Central Office	Yes
Matthew Miller	Teacher	MMS	No
Cathie Morton	Library/Media Specialist	Middle/High	Yes
Sean Shock	Network Technician	Central Office	No

Millbrook Central School District Demographic Profile

The Millbrook Central School District is located in the geographical center of Dutchess County. It has an area of 80 square miles in a rural/suburban setting. The district is comprised of 840 students who are housed in four buildings: Elm Drive Elementary School (P-2), Alden Place Elementary School (3-5), Millbrook Middle School (6-8) & Millbrook High School (9-12).

District-Wide Information (numbers)		
Administrators		9
Teachers		100
Support Staff		84
Students		849
Ethnic Statistics – Students (percentage)*		
Black		6%
Asian or Pacific Islander		2%
Hispanic		15%
White		83%
Multiple Races		6%
School Enrollment (numbers - approximate)		
Millbrook High School	Students (Grade 9-12)	285
Millbrook Middle School	Students (Grade 6-8)	207
Alden Place Elementary	Students (Grade 3-5)	161
Elm Drive Elementary	Students (Grade P-2)	190

**Statistics above are from the 2020 / 2021 School Year*

Annual Budget for 2021-2022	\$31,714,951
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District Mission Statement

"It is the mission of the Millbrook Central School District to prepare students to deal effectively with the challenge of an ever-changing society by helping them to become humane critical thinkers, decision makers and problem solvers."

District Technology Vision Statement

We will provide every student with access to a full range of educational technology tools to develop higher-order thinking skills (problem solving, critical and creative thinking, decision making).

We identify, use, evaluate, and promote appropriate technology solutions to enhance and support instruction and standards-based curriculum leading to high levels of student achievement.

We will continue to procure appropriate technology solutions to support our instructional strategies for the:

- Incorporation of real-life applications and career standards
- Encouragement of exploration and discovery learning methods
- Engagement of students in project-oriented, student-centered learning

We provide on-going, technology-based, interactive learning opportunities for students, teachers, and administrators that can be accessed anytime and anywhere.

District Technology Goals

1. Align technology resources with district curriculum

- a. Support mixed modality teaching and learning environments as was required during the COVID-19 pandemic.
- b. Adopt the tools, techniques, and resources acquired during the pandemic for a post-pandemic return to a more traditional school environment.
- c. Align systems, practices, and resource allocation with NYSED's Computer Science and Digital Fluency Learning Standards.
- d. Re-evaluate the utilization of spaces dedicated to technology-based learning (i.e. computer labs) throughout the district in light of evolving curriculum needs and the district now being fully 1:1 with every student in possession of a personal computing device (i.e. Chromebooks).
- e. Provide timely, relevant, and ongoing instructional technology professional development to our teachers and support staff

2. Establish and expand fiscally responsible technology device and system planning

- a. Update and maintain a working list of all information technology systems and major related components including comprehensive and piecemeal costs of replacement
- b. Plan system and component upgrades and replacements on a multi-year, staggered cycle to maintain level budget planning and avoid unexpected purchases to the extent possible
- c. Leverage all purchasing options available to maximize any potential aid and minimize costs, including but not limited to: procurement via local and regional BOCES, NYS OGS, GSA, and other purchasing consortiums available to the district and permissible by NYS General Municipal Law.

3. Maintain a safe and secure digital learning environment for our school community

- a. Continuously assess our cybersecurity protocols to ensure student safety, data privacy, and overall network security
- b. Engage with partner agencies to monitor and audit our network security and adherence to NIST and CIS standards for network policies, configurations, and security protocols
- c. Expand on staff training regarding best practices for technology usage and compliance with the district Acceptable Use Policies for district network and technology devices

Technology Committee Goals

The District Technology Committee set out to achieve the following goals for the 2022-25 school years:

1. Review and document all district-wide technology-related projects recently completed and in progress.
2. Identify immediate, short- and long-term instructional technology needs and goals at every building / grade level.
3. Identify immediate, short- and long-term operational technology needs and goals.
4. Create a long range (5 – 7 year) replacement cycle projection for all major technology systems, components, and infrastructure with the intent to revise annually / as needed.
5. Create / update a review process for instructional software selection and assessment for current and future years.
6. Formalize the district 1:1 computing device initiative including device selection, the potential for differentiation, and appropriate replacement cycles.
7. Explore updates and revisions to policy, protocol, and process guidance documents for the use of district technology, including matters of cybersecurity, data privacy, and compliance with NYS Education Law 2D.

Highlights of Accomplishments Since the Creation of the Previous Technology Plan

- Established and currently maintain asset inventory for technology devices and infrastructure components
- Implemented work order systems for Facilities & Operations and Technology Department work orders, projects, and requests
- Ongoing professional development and the re-creation of a full-time educational technology specialist position
- Technology infrastructure expansion, including fully equipping Elm Drive Elementary with WiFi access in every learning and office space
- Full 1:1 Chromebook implementation for students K through 12
- Comprehensive upgrade to the district's video management system (VMS)
- Doubled the district's overall broadband capacity
- Increased bandwidth throughput between Elm Drive Elementary and the main campus by 200%
- Upgraded the district's firewall
- Implemented a fully-functional remote desktop solution in order to provide remote technical support
- Updated network administrator process & protocols for high-level auditing and management
- Google for Education subscription upgraded to Google Enterprise for Education
- Established multiple media channels for the live streaming of district sports and events, including awards ceremonies, concerts, and Board of Education meetings
- All staff now have Google and Active Directory accounts
- The district's mass messaging platform was transitioned to Blackboard Mass Notifications to expand and improve districtwide communications including a mobile application, full website integration, SMS texting, phone calls, emails, and multi-language translation services integrated with the district's staff and student information systems
- IXL platform expanded from MHS to full K-12 access as an instructional tool for learning diagnostics and assessments

Instructional Support Plan

The COVID-19 pandemic accelerated our technology plans in a number of ways. First and foremost, it brought the district into a fully 1:1 digital device model necessitated by the requirements for remote learning. What was an aspirational goal to be achieved over a 3 – 5 year time frame in the previous technology plan became a necessary reality almost overnight. With that, a number of issues were brought to light that we will continue to address in the coming years through this planning process and beyond, including:

- High-speed internet access (both on campus and at home)
- 1:1 Digital device replacement cycles
- 1:1 Digital device differentiation
- Classroom configuration and design (both in general as well as by grade level and department)
- Interactive instructional software platform capability and functionality
- Existing computer lab function and intended utilization
- Student engagement and connecting with students in a mixed modality environment, including efforts to bolster Social Emotional Learning supports and interactive learning
- Cybersecurity, both in terms of data privacy and student safety
- Technical proficiency and the availability of training for students and staff

We found that providing the necessary equipment to our students and staff was just the first step towards properly equipping them for the teaching and learning environment of the 2020-21 school year. Understanding that this was an unorthodox year, we intend to use these questions, concerns, and lessons learned to inform our practices and planning as we move into future years.

As we move into the coming school years, we will continue to examine and reevaluate our curriculum in light of our students' continually evolving technological needs, including alignment with the New York State Computer Science and Digital Fluency Learning Standards for Kindergarten through 12th Grade (revised 2020 - see attached supplemental materials) as well as Millbrook CSD's own expectations for the proficiencies and skills our students acquire on their pathway to graduation. Expectations for digital fluency and technological skills will be explored by grade level, discipline, and department using these and other resources available as we work with our curriculum teams to identify the tools and supports needed to achieve these goals, including software, hardware, and training for staff and students alike. Our curriculum, professional development, and budget planning efforts will be continually updated to meet the needs for these identified tools and supports moving forward.

Infrastructure & Operations Support Plan

Over the course of the current and previous school years, the district mobilized quickly to support the sudden needs of remote and hybrid digital learning environments during the COVID-19 pandemic. It is our goal to ensure that the positive technological advancements made out of this necessity are sustainable in the future. Beyond the direct instructional supports referenced above and throughout this document, the district's technology team will also be working continuously to bolster our non-instructional operations and infrastructure systems to ensure we are able to sustain a high-level of technology-driven operational efficacy and efficiency. These efforts will include a focus on the following subcategories:

Communications:

- The district expanded our use of Blackboard products (previously limited to our website hosting) to now serve as our primary communications system by implementing Blackboard Mass Notifications. With Blackboard, we can now simultaneously reach our community by web posting, phone, email, SMS text message, and custom mobile app push notifications in a fast, efficient, and user-friendly way. This platform can also be expanded to allow teachers to use it for direct communication with their students and parents by course and section by interfacing directly with our student information system. Our new mass messaging platform also provides automatic translation services to better reach our families in their native languages when possible.
- The district is also in the process of upgrading our Informacast system for internal communications during emergency drills and events, such as building or district-wide lockdowns.

Internet Safety & Cybersecurity:

- Following the implementation of New York State Education Law 2D, the district has enacted a number of data privacy protocols to further safeguard our staff and student information. This includes multifactor authentication protocols and the implementation of more stringent network policies, practices, and procedures.
- The district has also taken steps to improve network security by upgrading our firewall, content filtering (iBoss) and website monitoring (GoGuardian) systems for greater functionality both on campus and with remote users.
- The district introduced a third-party phishing training and protection service (KnowBe4) to train our staff in identifying and avoiding spoof emails and online scam attempts.
- While student accounts have previously been restricted to in-domain contacts, we are implementing protocols for the whitelisting of certain domains for secondary students, beginning with our high school. This will allow a gradual, phased-in approach to allowing our students to reach the outside world with their student accounts to approved network and email traffic as determined by their teachers, principals, and district administration.

- The district will be employing the services of multiple third-party auditing and vendor partnerships to assist with our cybersecurity monitoring and system maintenance. These vendors will provide audits of both our Windows active directory and Google environments to identify and resolve potential vulnerabilities to best protect our networks and information systems. These vendor partners will also assist the district in maintaining adherence to industry best practices as outlined in the NIST framework and CIS Controls.
- District administrators will continue auditing and streamlining high-level administrative access across all software platforms and information systems to ensure limited access and maximum accountability for those with the highest levels of system permissions.

Professional Development:

- The district created an in-house educational technology specialist position for the 2020-21 school year. That position has since evolved into a full-time administrative position to support our teachers by providing ongoing training and professional development with a high focus on instructional technology tools and resources as well as district data analytics and reporting.
- The district has begun cultivating a repository of training materials (both 3rd party and district-created) as resources for our teachers districtwide.
- The district will continue to explore external resources for additional professional development to complement our in-house efforts.
- In the coming years, we also intend to provide “technology blackout” training to prepare our staff and students for how to properly handle partial and complete network outages in order to maintain a continuity of learning and operations when the network is either partially or wholly disabled.

Non-Instructional Supports:

- Work order systems are currently in place for facilities (SchoolDude) and IT related needs (Kace). These systems will be reviewed at least annually for function and the potential for expansion integration with each other and related systems.
- System integrations have been initiated to help our information systems better transfer data amongst each other, such as nVision, SchoolTool, Blackboard, and EdVistas. Opportunities to improve and expand upon these intersystem communications will continue to be explored.
- Through our annual software review process, we are looking to streamline system utilization where possible to avoid unnecessary redundancies and save costs where practical (e.g. eliminating multiple software & systems performing similar functions).
- We will be working with the administration and other committees to regularly review policies and procedures to ensure applicability and state & federal compliance in terms of information management and data privacy.
- We will conduct an annual review of the district’s Acceptable Use Policy (AUP) for district technology resources, including devices and network access for appropriate language, content, and coverage.

School Safety:

- We intend to expand our Informacast system for rapid notification during emergency events, such as lockdowns, lockouts, etc.
- Following the completion of the comprehensive upgrades to the district's video management system last year, we are phasing-in an annual piecemeal component and camera replacement plan over time leveraging state funding to the maximum extent possible in order to preclude the need for another full-scale system replacement in the future.
- In the 2021-22 school year, we are planning to upgrade our district-wide door access control system, with plans to integrate with our video management system and potentially other security systems to the extent possible.

Community Outreach & Engagement:

- Over the past two years, the district began hosting virtual meetings & community information sessions. The tools used to create these events will continue to be maintained and utilized in the future to help the district reach as many of our constituents as possible, even beyond the pandemic conditions that initially prompted these activities.
- In partnership with our instructional leaders, we are looking into the implementation of a Parent University model that would be used to provide training for parents & guardians on matters of instructional technology, processes, and the related tools available to them in support of their children's learning. Additional topics may include: Internet Safety, Avoiding Phishing and other Internet/Email Scams, an overview of Google's G-suite including Gmail, Google Docs, and related applications, and basic word processing & spreadsheet skills

Equipment, Software, Technical Support & Equitable Access Goals:

- The district fully understands that digital equity is a major component of educational equity. Our plans are to provide every student with the digital tools and training they need in order to be successful in school, and in their academic and career paths that follow.
- In accordance with forthcoming NYSED requirements, the district will continue to monitor students' at-home high-speed internet access, provide any assistance available in obtaining access as required, and report said to the state annually
- As instructional technology devices and expectations evolve, we are transitioning from a 5- to 8-year replacement cycle to a 4-year replacement cycle for personal technology devices (i.e. Chromebooks).
 - New devices will be issued for students in grades 3, 6, and 9 to be retained for the duration of their time in those respective school buildings.
 - Pre-K and Kindergarten will be allocated tablets that will be rotated on a 4-year replacement cycle.

- We are continuing conversations around device differentiation for grades 3 – 12.
- Staff equipment replacement cycles and specifications will be reevaluated annually.
- Computer lab upgrades & device replacements were put on hold for the 2021-22 school year as the form and function of our computer labs are being reevaluated for future use in alignment with the district's curriculum goals.
- Annual administrative software reviews are being conducted in partnership with building principals, the Supervisor of Data Analytics and Professional Development, and the Deputy Superintendent.
- We are engaged in continual monitoring of our network infrastructure to ensure adequate resources remain available and expandable as needed to sustain our instructional and operational needs.
- We continue to schedule regular and recommended service and support strategically to maintain our devices and equipment in optimal condition, minimize downtime, and mitigate any potentially negative impacts to instruction and district operations

Regulatory Compliance:

- We will ensure compliance with all State & Federal regulations, including all data collection and reporting requirements.
- We will ensure all of the district's software products, services, and data management practices are compliant with NY State Education Law 2D.

Budget Planning & Funding

Due to the unforeseen circumstances of the current and previous school years, the district was faced with a number of unplanned expenditures to maintain a functional academic program throughout the emergency measures taken during the COVID-19 pandemic. These circumstances called for a necessary shift in intended budget allocation from 2020 to 2021 and 2022. Moving forward, the district's technology budget is being carefully planned to both support the new initiatives, infrastructure components, and equipment brought in over the past year and a half, while also strategically planning future projects, replacement cycles, and addressing other equipment and systems that were temporarily deprioritized to support our academic programs during the aforementioned emergency measures. Replacement cycles are being planned on a staggered, multi-year basis to minimize the potential budgetary impact of multiple high-cost items coming due for replacement simultaneously.

The district will continue to plan major infrastructure and equipment purchases through our BOCES partners to maximize aid. All available alternative funding sources will be reviewed and explored on an annual basis to alleviate the financial strain on our general fund and maintain as level a budget as possible year-to-year. The district will continue to apply for and E-Rate funding annually through Dutchess BOCES for as long as said funds are made available. Capital project planning and Smart Schools Bond Act funds will also factor into the planned replacement and / or expansion of our major systems and equipment. We currently still have approximately \$340,000 in available Smart Schools Bond Act funds.

Recent Major Projects (2020-22):

- In 2020, the district initiated a full upgrade to our video management system with a budget of \$250,000. This project was completed in 2021 and kept within the allocated budget.
- In the 2020-21 school year, the district also completed the following projects:
 - Installed comprehensive WiFi coverage at Elm Elementary School at an approximate cost of \$45,000
 - District firewall upgrade at an approximate cost of \$30,000
- In the 2021-22 school year, the district is undergoing a comprehensive upgrade to our VOIP phone system currently approaching End of Life (EOL). Approximate projected cost for districtwide handsets and related infrastructure upgrades is \$45,000 (currently budgeted for and inclusive of partial E-Rate funding).
- Additional information including exact figures and replacement projections for the above projects are listed in Appendix B.

Summary of New Programs & Aspirational Goals

Equipment:

- Build on the existing 1:1 Chromebook model for all students, Pre-K to grade 12
- Phase in a 4-year replacement cycle for all student devices over the next 3 years
- Begin 1:1 student device differentiation by introducing Chromebook tablets for pre-kindergarten and kindergarten for the 2021-22 school year
- Further explore device differentiation by banded grade levels from grades 1 through 12
- Explore device differentiation and specialization for all staff as their allocated devices approach end-of-life replacement
- Explore expanding the district's network to support outdoor instructional environments

Instruction:

- Work with the technology committee in partnership with the district's instructional leadership team to review and align our district curriculum with the New York State Computer Science and Digital Fluency Learning Standards (Grades K-12) revised 2020 (full document included in "supplemental materials" attachments)
- Explore alternatives and possible upgrades to classroom technologies, including multimedia interactive instructional equipment, STEM learning facilities, makerspaces, and other technology-driven learning environments
- Continually assess the district's software purchases and subscriptions for maximum impact, usage, and viability
- Begin expanding the access of our secondary student accounts with website and email correspondence outside of the millbrookcsd.org domain in cooperation with our teachers and principals, beginning at Millbrook High School to help our students better connect with the outside world while still maintaining a high level of cybersecurity and digital privacy
- Maintain an in-house educational technology specialist who will design and provide technology-driven professional development programs for our instructional staff

Infrastructure & Building Systems:

- Monitor increased bandwidth capacity as all students return to campus to ensure proper capacity is available
- Work with capital planning committees and facilities department to explore the implementation and / or expansion of smart building technologies to increase performance capacity, efficiency, and cost avoidance where possible
- Continue exploring options to transition from appliance-based to cloud-based systems, i.e. virtual servers and content filtering services
- Continue to integrate information systems where possible to maximize efficiency, improve interpersonal and intersystem communication through secure data transfers, and maximize our system capabilities

Safety and Security:

- Implement third-party cybersecurity audits to test the district's network and related systems for any potential vulnerabilities, and ensure adherence with industry best practices, NIST and CIS protocols, and NY State Education Law 2D compliance
- Upgrade the district's visitor management and door access systems in partnership with the facilities department and the district safety committee
- Expand video management system and implement annual camera replacements under Section 3602, subdivision 6-c of New York State Education Law allowing for a fully reimbursable unit cost of up to \$2,000 per camera up to a maximum cost allowance of \$35,000 per year
- Continue to formalize and streamline the processes and protocols related to high-level digital systems access, minimizing the number of users to only those who absolutely must have access and maintaining the highest levels of accountability in our most critical information systems
- Partner with the district's instructional leaders to establish and expand upon appropriate response protocols for any expected or reported violations to the district's Acceptable Use Policy for district technology

Plan Development and Continuance

The revised Technology Plan for 2022-2025 was created by the District Technology Committee composed of teachers, administrators, support staff, and Board of Education members. Input was solicited from all teachers and select student feedback also informed the committee work in putting this plan together.

With so many abrupt but necessary changes to the district's technology landscape from 2020 to 2022, this updated document was crafted to document those changes and begin to identify the district's new direction, current activities, and goals for the upcoming school year and beyond. Knowing how quickly things can change, especially in the realms of operational and instructional technologies, the intent is for this to be a living document to be updated annually and overhauled triennially as our plans and systems evolve in order to keep our Board of Education and the district community as a whole abreast of our intents and activities. As such, the district technology committee will meet throughout the coming school year to update and revise this document and the plans herein as the many aspects of the plan are further explored, implemented, and modified.