Los Gatos-Saratoga Union High School District
Technology Plan 2022 - 2026

As we emerge from the current pandemic, the Los Gatos-Saratoga Union High School District (LGSUHSD) realizes the way our students and staff use technology has fundamentally shifted. Not only have the tools we use daily to support our curriculum and instruction grown exponentially over the last two years, we have added new devices, new systems, and new software solutions. Teachers are integrating online resources into their daily curriculum, students are bringing personal technology to campus, and students, parents and staff all need access to a wide variety of online tools provided by our district. The daily instruction of our students is now dependent on a rapid response and proactive planning for future technology. The goal of this technology plan is to support our students, staff and community, as we prepare our students for the future.

This technology plan is meant to be a functional document which will support our Strategic Plan, Local Control and Accountability Plan (LCAP), School Plan for Student Achievement (SPSA) and other district goals. This dynamic plan will be updated when the needs of the district or the direction of educational technology change and will serve as a guide for the work the technology department does to support district goals.

Community Input

Our Technology Advisory Committee (TAC) was integral in the development of this plan. Their participation and honest feedback regarding our present technology needs and future vision helped shape the district's technology goals for the next four years. The committee was formed to "*Evaluate the current status of the technology infrastructure and education technology systems in the district. This committee will provide advice on the district's technology goals and strategies including an update of the roadmap of the technology capital projects to be completed as part of the Measure E bond program.*" The TAC is composed of board members, parents and community members, district and school site administrators, students, district teachers, classified staff, and technology team members. The advisory committee highlighted the following aspects of our district technology:

- Our district knows the importance of technology in the classroom and how rapidly it changes
- We have a strong technology department but providing timely support and updated devices is a struggle
- We need to be proactive versus reactive when replacing devices and infrastructure
- Technology will become more mobile and more individualized as we move forward

The District's Technology Team recently analyzed and assessed our network infrastructure, hardware, policies and procedures. The team concluded that:

- Going forward we will continue to support remote connections and an environment that includes flexibility, portability and a hybrid option
- Our district's aging network infrastructure needs replacement
- There is an increased need for student devices every day in every classroom
- There is an increased need for a robust wireless network
- There is a need to proactively plan and fund a replacement cycle for district technology
- There is an increased need to support our district students and staff as we quickly react to local and global emergencies that affect our students and campuses. These emergencies include power outages, extreme weather, wildfires and pandemics.

Student Device Policy (BYOD)

Since the early days of school technology initiatives, districts have struggled with the question of funding for replacement of outdated student devices. Our district is no different. For over twenty years, we have gone through boom and bust cycles which affect the age of our computer labs and our core network equipment. In an affluent district such as LGSUHSD, we are fortunate that many of our students have access to personal devices at home. Rather than providing 1:1 devices or classroom carts at school, we can leverage this access to technology and ask students to bring their own device to school. In 2018, we adopted a Bring Your Own Device (BYOD) policy which encouraged students to bring personal laptops and other mobile devices to campus for instructional use. There are many advantages to this BYOD model. Students prefer to use their own technology because they are more familiar with the device and they require less teacher support to use it. The district does not need to refresh as many carts and labs thereby freeing up precious resources for new educational technology initiatives. The district will still provide devices for classes which use specialized hardware and software packages. After over a year of remote learning, teachers have relied on integrating technology into their daily lessons. Going forward, we will highly encourage students to bring devices daily and will provide Chromebooks for any student who cannot afford to do so. Our full BYOD policy can be found on the district website.

Technology Goals 2022-2026

Goal 1: Complete remaining projects identified by Technology Bond Committee in 2015 and complete other necessary infrastructure upgrades using the remaining Measure E Technology Funds.

In 2014, the community passed Measure E, a general obligation bond initiative, to fund campus modernization projects. As part of Measure E, $4,000,000 of this money was earmarked to improve technology in our schools. In 2015, the district convened a Technology Bond Committee to do a needs analysis and make recommendations on how best to use these funds. That committee worked with our Digital Learning Leaders and made the following recommendations:

- Consistency of equipment with teacher choice, model workspaces, training and support, reliability and availability of equipment
- Flexible device choices for teachers and students depending on the task at hand
- Purchase shared carts of devices for teachers to use - supported by the findings in the district ethnographic study

- Put training for teachers in place before purchasing the hardware

In the intervening years, approximately $2,500,000 of the technology bond funds have been expended on projects including:

- Core Router upgrades (2014)
- Classroom Projection System upgrades (2016-2020)
- New Building Technology (ongoing)
- Security Camera upgrades (2015)
- Wireless network Access Point upgrades (2020)

Unfortunately, although replacement of core network infrastructure was earmarked by the Technology Bond Committee for bond fund monies, with the exception of recent WiFi upgrades, this project has not been started. Our district needs to begin immediate infrastructure, server, and student lab upgrades to continue supporting the educational mission of the district. The network infrastructure is the backbone of technology in LGSUHSD, and with the looming need for robust high-speed internet access throughout campus, along with the fact that the current systems are aging, these upgrades are a priority These critical upgrades come at a time of pandemic-related supply chain issues and chip shortages which are causing delays and slowing the achievement of our goals. The remaining technology bond funds will be used to complete necessary network infrastructure upgrades and Technology Bond Committee initiatives.

Outcomes	**Expected Timeframe**
Replace end of life network switches (Measure E Bond)	June 2022 - Jan 2023
Replace battery backup devices in IDFs and MDFs to support an hour of runtime during PSPS and other power events (Measure E Bond)	June 2022 - Jan 2023
Complete upgrade of “teacher toolkit” presentation systems across district	Spring 2023
Replace aging servers ensuring continued reliability and security of network (Measure E Bond)	Fall 2023
Replace current Bells/Public Announcement System to provide reliable coverage in classrooms and outdoor campus spaces (Measure E Bond)	Spring 2024
Replace end of life core routers (Measure E Bond)	Summer 2024
Replace obsolete staff computers, student labs, and student devices (Measure E/Other District Funding)	ongoing

Goal 2 - Identify and remediate vulnerabilities in current technology department emergency, security, and disaster recovery

plans and procedures.

As we face an increase in cyber attacks, power outages and other unexpected challenges, the security of the district's physical and digital assets are an ongoing concern. The technology department prioritizes network security and user training. Our students have participated in digital citizenship training and we offer ongoing staff professional development on cybersecurity. The technology team is continually improving network security. Recent projects included implementation and installation of endpoint security software on all district servers and devices beginning in Spring of 2020, as we entered remote learning.

We will continue to proactively prepare for the inevitable cyber attack or other unexpected event which could threaten our district campuses, network infrastructure and data.

Outcomes	**Expected Timeframe**
Gather and internally review all current emergency plans and procedures	June 2022
Contract with key partners to conduct internal audits of our systems	June 2022
Join EdTech JPA and other organizations to provide awareness of developments and provide cost savings	June 2022
Work with site administrative and emergency teams to support campus needs during unexpected emergency or sustained environmental events such as a pandemic, power outage or natural disaster.	Fall 2022 - Fall 2024
Continue our staff campaign of digital education and online safety using fake phishing attempts, newsletters and other communications	Ongoing
Modify plans and procedures and implement security changes based on recommendations stemming from evaluation	Ongoing
Review and/or modify policies concerning appropriate use of technology resources by staff and students	June 2023
Evaluate current campus security camera systems, upgrade or replace as necessary	Summer 2024 - pending funding
Evaluate current campus key management, upgrade to access control system in conjunction with security camera upgrade	Summer 2024 - pending funding
Evaluate current campus guest access, upgrade to integrate with campus key management	Summer 2024 - pending funding

Goal 3 - Work with Curriculum and Instruction staff to identify and implement relevant educational technology systems and support student use of technology in the curriculum

Campus technology exists to support the core mission of our district, the education of our students. The technology department therefore should not make key decisions which affect this mission without input and agreement from other departments. For the past six years, our Curriculum and Instruction and Technology departments have worked closely together to implement 21st century learning tools that support the curriculum and instruction at the school sites. We adopted the Canvas Learning Management System in 2015 and became a Google District in 2016. These two collaborative efforts as well as many others positioned our district to pivot to remote learning and navigate the pandemic. Our goal is to continue collaborating to ensure student success as we gradually return to a new normal and prepare for future challenges.

Outcome/s	**Expected Timeframe**
Continue to collaborate with Curriculum and Instruction Department and EdTech leaders to support Canvas usage and norms as well as professional development opportunities and other district initiatives	Ongoing
BYOD fully implemented	Fall 2023
Modify wireless network for ease of access by students and staff while continuing to strengthen network security and data integrity.	Spring 2023
Dedicated annual source of funding and regular replacement cycle for student and staff technology	Fall 2024
Evaluate and upgrade/replace current user onboarding automation to streamline process and include Single Sign-on (SSO) capabilities for users.	Spring 2025

Challenges

Our district technology goals capture the work that needs to be done to provide a stable, robust learning environment for our students and staff. Much of the initial work can be completed by promoting our student device policy and leveraging the remaining Measure E Technology Bond Funds. However, to ensure future success, district technology needs predictable and reliable funding sources to refresh staff and student devices, network infrastructure and other equipment on a planned schedule based on industry standard end-of-life estimates.

Appendix 1 - District Technology Overview 2021

Our technology infrastructure is prepared to:

- Support online curriculum and testing initiatives
- Support a planned BYOD initiative
- Allow all students content filtered internet access
- Support students and staff during remote learning

Our infrastructure is composed of:

- Networking - max 10 Gigabit throughput
    - Cisco core (refreshed: 2015) - 10 Gb throughput
    - Cisco network closets (refreshed: 2013/2014) - 1Gb throughput fiber connections to each site's main closet

- Phones/Voicemail/Conferencing
    - GoToConnect hosted phone system including remote calling and meeting capabilities (refreshed 2021)
    - Google Meet and Zoom accounts for all students and staff

- WiFi
    - Cisco Managed (Controllers refreshed 2014, Access Points refreshed 2020)
    - All indoor educational areas covered by wireless access point
    - Outdoor wifi access coverage in key areas

- Servers
    - Windows Server Core 2016 (refreshed 2015)
    - Active Directory Structure (last audited 2014)

- Data storage and recovery
    - Google Workspace for Education (unlimited storage through Dec 2023)
    - Local storage servers (average age 3 years)
    - Barracuda cloud backups (refreshed 2020)

- Aeries - Student Information System
- Canvas Learning Management System

Bandwidth Capacity and Utilization

- ISP - Santa Clara County Office of Education
- Bandwidth is 10 Gigabit Fiber ring to SCCOE

- Support of SCCOE IT Department to troubleshoot bandwidth issues
- Content Filtering provided by SCCOE using Palo Alto Networks hardware

Student and Staff Systems

- Support 4850 district owned devices plus all student/staff personal devices
    - 600 Windows Devices (average age 4.5 yrs)
    - 1500 Mac OS Devices (average age 6.9 yrs)
    - 1400 Chromebooks (average age 2.5 yrs)
    - 1350 Unsupported Chromebooks (age 5+ years)
- Staff systems Mac and Windows desktops and laptops depending on preference & availability. Average age of staff laptops is four years district wide.
- Staff Mobile devices, such as iPads, used by teachers integrating technology into curriculum
- Ideal Teacher Toolbox includes: Presentation system, AV system, document camera and laptop (currently 90% of teachers have this full set-up). Average age of projector systems is three years districtwide

Student Labs

- Student labs - Mix of Mac and Windows desktop labs
- Mobile carts containing Mac, Windows, iPad and Chromebook systems
- Chromebooks available for student checkout
- Average age of the Windows labs/carts is 6.4 years
- Average age of the Mac labs/carts is 7 years
- Average age of Chromebooks is 4 years (Chromebooks are not supported by Google after year 5)

Software licensing available to students and staff for curricular use

- Google Workspace for Education
- Canvas Learning Management System
- Adobe Creative Cloud
- Zoom Conferencing
- Turnitin
- Peardeck
- Screencastify
- EquatIO
- Securly
- Noodletools and EBSCO Library Databases
- Online Textbooks (HMH, Savaas, McGraw Hill, Pearson)
- Naviance
- Other additional software for specific courses (Music, Engineering etc)