

DISTRICT ADDITIONAL ASSISTANCE OVERRIDE PROPOSAL

May 2015

The challenge of our education system is to leverage technology to create relevant learning experiences that mirror students' daily lives and the reality of their futures.

-National Education Technology Plan

A dramatic shift is sweeping through our schools. The signs are all around us:

- Third graders are programming robots to complete missions.
- Kindergartners are using iPads to create digital stories about animals and their habitats.
- Biology students participated in "Organelle Wars" in which they created Twitter accounts for their organelle to carry out a campaign for Most Valuable Organelle. Campaigns included movies posted to Twitter, which extolled the virtues of the microscopic candidates, or insulted other organelles based on current scientific findings about the intracellular objects.
- First and second graders are using GarageBand to record and analyze their reading fluency.
- Eighth grade English students are using modeling software, behavior over time graphs, and stock-flow diagrams to understand the relationships in a system.
- Middle school students are monitoring graphs of their heart rates to challenge their aerobic limits in physical education classes.
- Elementary students are creating digital portfolios to collect electronic samples of their work to demonstrate their learning. Then they use behavior over time graphs to visually display their progress.
- High school astronomy students work with actual data from the Mars Odyssey spacecraft, analyzing data about the surface of Mars from the craft's THEMIS instrument.
- Student councils and advisory boards are using web tools, such as Socrative, Survey Monkey, and Google to collect feedback and input about school-based community service projects. Results are projected in real time for timely decision-making.
- Middle and high school science students are using science-related probeware to measure acceleration, light, and temperature shifts.
- Teachers and students are connecting with CFSD alumni experts in the field about local, national, and global issues through Skype.
- Middle school students are using blogging tools to share, respond to, and critique writing selections across grade levels, and
- All CFSD students have access to a suite of software tools through Google Apps: Gmail, Google Docs, Google Presentations, and Google sites – all of which allow them to access and manipulate digital content to learn, create, and collaborate with others within and beyond the classroom.

Technology is ubiquitous, touching almost every part of our lives, our communities, and our homes. Think back a decade and many aspects of life today did not exist. The iPhone debuted in 2007. In the last ten years, Facebook, Twitter, Instagram, and other social media platforms have enabled communication and collaboration on a global scale. The first iPad was introduced in 2010. We had no idea that the Internet would transform how people live their lives and relate to one another and the world around them. Mobile computing continues to expand, making Internet access on the go integral to every day life. Born in another time, today's students will use tech-based tools throughout their lifetime. For them there is no divide

between “technology” and their daily lives. Their future will require them to be knowledgeable and proficient in the use of technology, and to engage with content and others beyond the classroom to anywhere in the world where people have access to devices and Internet connectivity. We believe it is our responsibility to teach and encourage our students to master technology as it applies to their learning and the future.

The Catalina Foothills School District (CFSD) community’s investment in technology through the current capital outlay override has enabled CFSD to keep pace with the ever-changing technological and educational landscape. The district will have the capacity to proactively provide technology and curriculum-related tools and resources in its classrooms for all students and educators if voters agree to underwrite this investment over the next seven (7) years, 2016-2017 through 2022-2023, via a District Additional Assistance (DAA) budget override.

We recommend that once again we ask CFSD voters to approve an override that generates \$2 million annually for seven years with a projected tax rate that doesn’t exceed its current level, and will likely decrease, over the life of the override. The funds generated will continue the infusion of technology equipment, software, and tech-based curriculum materials/resources into classrooms for student and teacher use. Today, in 2015, we envision a technology purchase plan as described below. As time goes by, we need the flexibility to adjust the mix of tools and resources based on the most current and relevant technological advancements.

Technology Equipment and Software

A major goal of the DAA override is to enable Catalina Foothills School District to provide each student with at least one Internet access device and appropriate software and resources for daily instructional use supported by a robust technology infrastructure. The form of these devices, software, and resources may or may not be standardized and will evolve over time because we are not able to forecast emerging technology trends. Due to the variety of devices that are available, we anticipate accomplishing this goal through the use of full-featured laptops, tablet devices, and cloud-based devices. The district has an established practice that ensures equitable distribution of and access to a standard set of technological tools and resources.

One of the primary expenditures in the current capital outlay override was in the lease of Apple laptop computers. The district supplemented these devices with Lenovo Chromebooks, iPads, and iPods. Overall, these devices have proven to be sturdy, reliable, and excellent instructional tools.

Across all grade levels, CFSD makes use of the free Google Apps for Education suite of products. Heavy usage of these tools has made Google Chromebook devices a viable and cost-effective option. For one-third the cost of a full-featured laptop, students can conduct Internet research, create, and share documents and files, and access countless “cloud-based” resources. These, and successive devices, are likely to be increasingly used in CFSD.

Teachers find their laptops to be a critical tool for research, presentation, lesson creation, grading, and professional learning. Students have grown to depend on available devices to assist them in research, content creation, communication, and collaboration with others in CFSD—and abroad. We plan to continue the process of procuring laptops, tablets, and other emerging technologies. This will enable the district to continue to provide our students and educators with state-of-the-art teaching and learning tools that are both productive and effective.

Projected Expenditures:

- Maintenance and replacement of standardized classroom equipment (e.g., SMARTBoards, projectors, document cameras, speakers)
- Multiple leases of laptop computers to replace outdated devices and to increase daily access (laptops are refreshed every 3-4 years)
- Chromebooks or similar devices to supplement device access
- Software and apps for laptops and other devices that meet the district standard

Teaching and Learning

No other area of education skills and knowledge has grown and changed so quickly as technology. Modern technologies have reshaped and will continue to transform the classroom in many ways. Resources that support curriculum and school media centers are expanding to include hardware, software, web-based applications, and online texts/resources (e.g., e-texts/e-books) to reinforce and extend learning, track progress and growth, and engage students in interactive learning when and where they need it. The DAA override will enable the district to procure hardware devices such as iPods, heart rate monitors, science-related probeware, NXT and EV2 LEGO Robotics kits, and other computer-connected, curriculum-related equipment. Frequent exposure to, and application of, varied technological tools during the learning process prepares our students to be digitally literate - a reality of their futures.

We must leverage technology to provide engaging and powerful learning experiences and content, as well as resources and assessments that measure student achievement in authentic and meaningful ways.

Web-based applications are a valuable alternative to the traditional option of purchasing software that must be installed on computers. The benefits include the ability to stay current with the latest version, the ability to access the application from a variety of platforms, and oftentimes the ability to access the application from home. Web-based options will open the door to a wide variety of resources that will support CFSD curricula and programs.

Additionally, the value of open educational resources is now recognized worldwide, leading to a vast array of learning, teaching, and research resources that learners of any age can use across all content areas. CFSD will support the use of open educational resources to promote innovative and creative opportunities for all learners and accelerate the adoption of new open technology-based learning tools, realizing that established procedures are necessary to evaluate and select these digital resources for instructional use.

With the current accelerated growth in mobile devices, we are already witnessing the emergence of flexible, open learning environments that enable contextual, real-time, interactive, and personalized learning. We also envision a classroom that includes the use of projection technologies so students and teachers can effectively communicate and collaborate with each other. Current technologies used in our classrooms are computer connected projectors, document cameras, and whiteboards. Emerging technologies provide new options for interaction and learning, including the ability of students to display their own screens to the projection device.

Projected Expenditures:

- Curriculum-related hardware and software, texts, and supplemental resources
- Web-based subscriptions and apps for research, curriculum content, and assessment
- Library/Media Center resources and technology
- Classroom projection improvements (projectors, mounts, wireless display technology)

Infrastructure

To achieve meaningful technology integration in the classroom, a robust education technology infrastructure is a must. In CFSD, students and educators will have access to a comprehensive infrastructure for learning when and where they need it.

It has proven cost effective to offload services to the Internet, but some services still require server hardware residing in CFSD. Certain curricular applications and storage needs will only function with local server hardware. In addition, servers are required to provide directory services and authentication to verify and secure our user accounts on the network. The DAA override funds will be used to maintain the proper level of hardware to support this need.

While there is still a need for local servers and storage capacity, the growing demand is for network capacity. Because of web-based applications, Internet research and resources, and cloud storage, a robust network must be provided to students and staff. The current network may be sufficient for today, but it will quickly become obsolete. Within the timeframe of this DAA override, all network equipment will need to be upgraded to provide adequate bandwidth and capacity for student and staff learning and productivity. This will include firewalls, routers, switches, wireless network controllers, and wireless access points.

The CFSD communication system utilizes Voice over Internet Protocol (VoIP) technology. It has been extremely reliable and has given the district a number of benefits, particularly in the areas of safety and communication. The initial change to this system occurred nearly ten years ago. While some of the critical components have been upgraded to maintain current standards, the system will require substantial upgrade and maintenance by the year 2019.

Projected Expenditures:

- Server hardware and storage
- Network improvements and maintenance (wired and wireless)
- VoIP communication system upgrade

Our Catalina Foothills School District strategic plan, *Envision21: Deep Learning*, outlines our commitment to prepare our students well for a 21st century life that is increasingly complex and global. Knowledge and proficiency in the use of technology will be required of our students regardless of the college and career pathways they choose. Through the learning and application of these technologies, the district will provide students with the ability to adapt to change, solve problems, make decisions, and think critically and creatively. Technology is an increasingly important aspect of modern school life and has dramatically changed the way students and educators go about their daily activities.

CFSD will continue to evaluate how the integration and use of technology impacts the professional skills of teachers and the learning results of students. That analysis will inform the long-term investment in technology.