THE WINNETKA PUBLIC SCHOOLS DISTRICT 36

A Community of Learners

Informational Memo: Technology Refresh Cycle

TO: School Board
            Superintendent Kocanda

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Background

With the addition of technology as a integral part of the classroom environment, teaching and learning has evolved over the past 10 years. In 2014, District 36 launched the Mobile Learning Initiative (MLI) with 1:1 iPads in grades 5-8 and cart-based iPads in grades K-4. Teachers have embraced many digital resources and the curriculum is being delivered with a blended approach (high tech/low tech).

With the additional devices, came the need for increased infrastructure. Bandwidth was increased from 50 Mbps to 600 Mbps across the District and additional access points were placed in areas of inconsistent connectivity.

Technology systems and devices are continually managed, evaluated, and updated. The technology department must be current on the latest trends and be ready to support new initiatives from all departments as they are requested.

In January of 2015, the Technology department drafted a Technology Refresh Cycle modeled after the curriculum review cycle with three distinct phases of *Research, Design, & Development*, *Implementation*, and *Monitor, Evaluate, & Revise*.

Technology Refresh Cycle

Phase 1: **Research, Development & Design**	· Conduct Needs Assessment · "Best Practices"/Research · Devise Implementation Plan
Phase 2: **Implement**	· Conduct Professional Development, if necessary · Create audits for monitoring implementation · Make adjustments as necessary
Phase 3: **Monitor, Evaluate & Revise**	· Review data · Continue professional development · Identify and implement supplemental needs

Major systems that are included in the refresh cycle include the VoIP phone system, security and camera systems, network infrastructure, and device refresh cycles for students, admin and staff. The complete cycle proposed in January 2015 and updated since can be viewed [at this link](#).

2018-2019 Projects
For the 2018-2019 school year the biggest projects are the device refresh (students and teachers), replacement of the VoIP system (which is 9 years old), and improving our network infrastructure with additional bandwidth, access points and a more robust network security appliance.

iPad Device Refresh
Each year since the launch of the MLI, the elementary school teachers have requested additional technology to lessen the need to share carts. Additional iPads and Chromebooks have been deployed to meet the greater demand for technology in the classrooms, but we are not 1:1 in the elementary school.

Many of our content areas have made the move to provide a more blended approach to learning.

Technology is used to...
> ...interact with their teachers via a learning management system or digital portfolio.
> ...research and demonstrate their understanding.
> ...connect with experts beyond our classrooms.
> ...create original works of art or compose music.
> ...produce their own digital content.

Throughout the 2017-2018 school year, the District Technology Committee (DTC) researched options for the next deployment of devices. Representatives from Google and Apple presented to the DTC to share each company's vision for teaching and learning and how their device would best meet the needs of our students and teachers.

To gather feedback and input, the District technology team visited each school to have conversations regarding device type, classroom use, current limitations, and future needs.   One of the major realizations that has prioritized the refresh for 2018-2019 is that the majority of our current iOS devices cannot be upgraded to the latest operating system (11.3) and storage continues to be a problem with a limit of 16 GB.

The proposed refresh is to bring 1:1 iPads down to the 3rd grade level, so all 3-8 grade students will have a dedicated device. 5-8 grade students will continue to bring their devices home, but 3-4 grade students will keep their devices in the classroom, each student will have a dedicated device.. In addition to the 1:1 scenario, devices will be deployed so that each elementary RC has an additional Chromebook cart and iPad cart. This will provide access to devices for the K-2 students.

It's important to note that most New Trier Township District schools, including New Trier High School, are continuing to use the iPad as the primary device for students. By moving forward with an iPad refresh in District 36, students will have continuity as they move through our schools and into New Trier. The Township Technology professionals meets on a monthly basis to share resources and best practices for teaching and learning with technology.

The iPad device that will be deployed is the newly released iPad 6. In addition to announcing the release of a new iPad dedicated to the education market, Apple announced upgraded storage of 200 GB per student, a new learning management system called SchoolWork, and the device is Apple pencil enabled. Apple is also releasing a new curriculum, "Everyone Can Create," which aligns with our progressive teaching philosophy and allows us to continue working with students to be successful creators, collaborators, communicators, and critical thinkers.

Device Refresh Numbers

Device Type	17/18	iPad Device Ratio 17/18	18/19	iPad Device Ratio 18/19	Cost
Skokie/Washburne 5-8 iPads	840	1:1	748 (new)	1:1	$223,652
Crow Island	235	.77:1	192 (new)	.85:1	$57,408
Greeley	157	.60:1	144 (new)	.73:1	$43,056
Hubbard Woods	275	1:1	152 (new)	.76:1	$45,448
RC and Specials iPads	150	x	150 (new)	x	$44,850
Chromebooks and 5 Carts	442	x	125 (additional)	x	$40,500
iPad Keyboard Cases (5-8)	x	x	748 (new)	x	$74,800
Teacher iPads	220	x	220 (new)	x	$65,780
Total					$595,494

The device refresh would be funded through a lease, for a cost of under $200,000 per year with a 3 year lease, less if the lease is extended to 4 or 5 years. It's important to note that we will be selling our current fleet back to a vendor for an amount that would offset the first year of the lease.

Buyback Estimate (iPads only): $66,280-$200,000

Network Infrastructure

From 2011-2016, new servers and switches were installed in the Data Center and wireless access points were installed in all five schools. Since then, we have increased our iPad fleet by over 1200, added 450 Chromebooks to our schools, and increased our internet bandwidth to a redundant connection of 600 mbps.

As we monitor our network, we find points of vulnerability that must be remedied. Switches need to be replaced, access points and bandwidth need to be increased, and our network security appliance must be updated. We plan to remedy these situations in the summer of 2018 with project intended to last us 5 years. Based on District 36 eRate eligibility, we should expect to see 20% reimbursed.

	Description	Approximate Cost
Equipment	Access points, switches, controllers, licensing (5 years)	$199, 663
Services	Configuration and Installation	$22,410
Firewall Subscription	Meraki MX450 Security Appliance and 5 year subscription	$23,798
Total		$245,871
Average Cost per Year based on 5 years		$49,174

Phone Upgrade

District 36 implemented a VOIP phone system in 2009 in partnership with Avaya (hardware), CCC technologies (management), and RedSky (e911 services). For the past two years, we have been replacing phones at a rate of up to 50 per year. The time involved is unsustainable and unnecessary. Additionally, our current e911 service is zone-based (40,000 square feet), not based on an exact location. Phone systems have evolved tremendously since 2009, and we hope to leverage many of these new technologies with our next upgrade.

Over the past year, the technology team has interviewed phone companies and asked for proposals. We looked at continuing our existing service with CCC, Rival 5 with YeaLink, Vonage, TIG with a Mitel solution, and IT Savvy with a solution from Sotel. Our research has led us to a decision to move forward with Rival 5 who offered the most

comprehensive service and eliminated some redundancies for our systems.
Updated services offered by Rival include:

- enhanced "follow-me" calling a service we currently pay for as an additional cost per user (ex. Tech team office phone rings their cell phone so they are not tied to their desk).
- Call recording (automatic, one-touch, and 911 emergency)
- All-call paging (group of phones or entire organization)
- Instant-messaging via web-portal
- E911 with location ID (room number)
- Emergency Information Boxes (allows parents to hear the message if they missed the call and call the District)
- Voicemail via email
- Caller ID masking (allows users to call from their personal device with number masked as a District number)
- 24/7 Bully hotline (routed to specific extensions, voicemail boxes, or outside services)

Annual Costs

- with 5 year equipment lease- ($7,670.87/month)- **$92,050/year**
- Service and Maintenance Only- ($6,691.02/month)- **$80,292/yea**r

Purchased Phones

- $48,565.60 (approximately $170/month savings compared to leasing)*
  *approximately $10,000 saved by purchasing phones rather than leasing.

Current Phone Expenses for Comparison

	One Time Costs	Average Annual Costs
E911 (by Zone)		$1,218
CCC Management and Support		$24,276
Replacement Phones	$215/phone	$10,750 (based on 1/week)
Avaya Support		$3,894
ATT		$37,812
Total Cost without granular e911		**$77,950**

With Granular e911

Upgrade E911 (granular Costs)	$25,000	$4,152
Total Cost with granular e911		**$82,102**

Look Back and Long Range Planning for VoIP, Devices, and Infrastructure

	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21
Apple Lease (2013-2016)	150,256	150,256	150,256	0	0	200,000	200,000	200,000
Apple Lease (2015-2018)	0	0	143,142	143,142	143,142	0	0	0
Infrastructure Lease (2015-2018)	0	0	162,859	162,859	162,859	0	0	0
VOIP	68,500	68,500	68,500	68,500	68,500	92,100	92,100	92,100
iPads (student)	0	605,055	56,000	58,800	0	in lease	in lease	in lease
iPads (teacher)	0	0	5,080	0	0	in lease	in lease	in lease
Laptops (teacher)	0	10,000	117,146	24,000	0	24,000	73,300	73,300
Laptops (student)	0	10,000	10,000	33,850	2,653	10,000	10,000	10,000
Laptops (admin)	0	0	2,000	22,826	2,000	0	25,000	0
Chromebooks	0	0	58,000	20,000	50,000	92,000	60,000	60,000
Infrastructure Purchases	0	0	72,000	27,000	50,000	50,000	50,000	50,000
Sub Total	218,756	843,811	844,982	560,977	479,154	468,100	510,400	485,400

Next Steps
Recommend that the School Board approves the District technology upgrades for Infrastructure, Device Refresh, and VoIP.

Alignment with the District 36 Shared Vision

The Winnetka Public Schools community empowers every student to flourish in an innovative, experiential environment. We support and challenge all learners to actively engage in continual growth and achievement to make a meaningful difference in the world.

The District's Technology team supports the goals outlined in the Shared Vision by:
- ❏ *Supporting all business operations, teaching and learning*
- ❏ *Providing the technology systems and support necessary for an innovative, experiential environment*