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CORDOVA SCHOOL DISTRICT

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Jason Fastenau
Director of Technology
Board Report
January, 2020

GOALS FOR THE TECHNOLOGY DEPARTMENT

- Implementation of the new network infrastructure. This system will allow us to move many of our current local hardware-based services into a single cloud-based interface.
    - The installation of the switching hardware is underway. I am moving over patch cable connections in groups on the weekends, and documenting in the system which network jacks they connect to. This piecemeal approach makes it easier to diagnose problems on Monday morning since only a small number of changes are being made at any one time. The documentation will also help with future planning and troubleshooting.

      The majority of the changeover will need to happen during a period of time when the network can be down for some time without causing too much interruption. I'm currently targeting Spring break for doing the changeover, with summer for final service switchovers. I am currently working with a network engineer to help with the redesign of the network infrastructure with the goal of a fairly simple and easy to troubleshoot network that has plenty of room for growth and future expansion.

- Develop a long-range vision for the district in how best to grow and adapt to current and emerging technologies to support quality education at a sustainable price point.
    - There are ongoing discussions by the admin team on the strategic plan that will inform the writing of the technology plan. Formal writing of the plan has not yet begun.

- Reduce power consumption and cooling needs in district network and server centers. This recently rose to the top of the list of concerns with the failure of the 18,000 BTU cooling unit in the CHS server room. The failure of this system caused the heat in the room to rise significantly. Given that this unit has failed multiple times in the past several years it was decided that continuing to service it was going to be a losing battle. Details on what has been done to address this have been included at the end of this report.

DISTRICT TECHNOLOGY FOCUS AREA(S)

- Current focuses:

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- Evaluate chromebooks at both elementary and MS/HS with test groups to determine if the district should begin moving to them as our primary student device. Use test groups to refine our implementation and configuration.
    - We will be surveying the students with chromebooks this month.

- Phone system update: The RFP (request for proposals) evaluation team has selected a proposal from Alaska Tech Services (ATS) to provide the district with a new phone system. Although not the least expensive option in terms of initial installation, this system will provide a robust solution that is projected to save the district over $30,000 over a reasonable minimum life expectancy for the system compared with other options.

  The purchase and installation of the the phone system, including purchasing several spare handsets, will not exceed $36,750.

- Cleanup of PowerSchool system: We had a PowerSchool specialist from Ketchikan scheduled to come in January for teacher and administrative training, as well as to help with system changes and development. She was unfortunately weathered into Juneau during the inservice, and has been rescheduled for February 20th.

- Long term focuses -
    - Develop a technology plan for the district that supports curriculum, educational goals, and the district strategic plan.
    - New network infrastructure setup and installation via Meraki.

BOARD POLICIES RELATED TO TECHNOLOGY

- BP 6161.4 - INTERNET
- BP 6161.5 - WEB SITES/PAGES
- BP 3515.6 SAFETY AND SECURITY RECORDING SYSTEMS - USE OF VIDEO AND AUDIO RECORDING
- BP 1114 DISTRICT-SPONSORED SOCIAL MEDIA
- BP 4170/4270 DISTRICT ISSUED PORTABLE TECHNOLOGY
- BP 5131.43 HARASSMENT, INTIMIDATION AND BULLYING (cyberbullying)

CURRENT PROJECTS/CONSIDERATIONS

- Test group for chromebooks at the JH/HS, and monitor progress of 6th grade chromebook

group. Address issues as they are discovered with test groups.
- Board Devices: It is probably time to replace the current board iPads. I would like feedback from the board about what to replace them with.
- Plans for phone system replacement and rollover.
- Cisco Meraki network deployment

UPCOMING PROJECTS/CONSIDERATIONS

- Plans for phone system migration.
- Continued power usage and need for cooling reductions in network rooms.

STAFF PROFESSIONAL DEVELOPMENT OPPORTUNITIES

- Feb 20th PowerSchool training for staff.
- Alaska Society for Technology in Education, (ASTE) conference Feb 22nd-25th to be attended by six teachers.

POWER USAGE AND COOLING NEEDS

The failure of the AC system caused the temperature in the server room to rise to levels that would likely shorten the lifespan of the existing equipment. We have taken the following measures to address this issue:

- With Mr. Pearson's help we turned off the heat in both my office and the larger technology room, and opened up the vents in the wall between the larger room and the server room. The equipment in the server room is now providing heat for these two rooms.
    - A fan is blowing into the bottom of the server room, and air can passively vent out from the top of the server room into the larger room.
    - An active exhaust fan is carrying hot air from the top of the room out into another area in the school.

- Mr. Motter and I conducted an inventory of the servers and equipment running in the server room, and determined that a number of items could be removed from service at this time without negatively impacting the network or delivered services.
    - Even with the installation of several new pieces of Meraki gear, we were able to remove a net of 3090 max watts of equipment. Even if we assume the equipment is only actually using 60% of the maximum power rating, this equates to an annual savings of $4,373 at $0.27 a Kilowatt Hour. This electrical usage equates to over 6300 BTUs worth of heat generation per hour that we no longer have to actively

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counter with air conditioning. (3090 watts * 60% capacity * 3.41 conversion factor)

- I have identified additional equipment totalling over 2400 max watts that we will be able to remove over the next year as we transition more services to the new Meraki system, and replace old equipment like the existing phone servers with newer less power-intensive systems. This will equate to additional power savings and reduction in the need for active cooling.

Net wattage removed	3090
KWH	3.09
Estimated Actual Power Usage	60.00%
Hours/day	24
Day/year	364
Total Annual Wattage	16,196.54
Cost per KWH	$0.27
Annual Cost	$4,373.07
BTU of equipment	6,325.85

- Although the server room temperature has dropped to warm, but acceptable, levels with the above actions, the temperature could still stand to come down a bit, and will likely return to unsafe levels during the summer. A 14,000 BTU stand-alone AC unit has been purchased for the room to provide additional cooling. The hot air generated by this unit will be vented to another area of the school once it is installed.

- On the wishlist for the future is to figure out a way to provide filtered outside air intake into the server room to lower cooling costs in the winter. As hot air is actively vented out of the ceiling of the room the cold outside air would replace it near floor level.