

**ORANGE COUNTY
BOARD OF EDUCATION**

AGENDA ITEM ABSTRACT

Meeting Date: March 24, 2014

AGENDA ITEM No. 14-03-(2)-17

ACTION ITEM: (Y/N) Y

SUBJECT: Technology CIP Update-Infrastructure Upgrade

INFO. CONTACT: Dr. Gerri P Martin, Superintendent **PHONE:** 919-732-8126

ATTACHMENTS:

1. Original Proposed Funding Plan for OCS 1:1 Laptop Initiative-Revised 2/24/14
2. Business Case – Initiative: Infrastructure/Network Upgrade – Phase I

PURPOSE: The purpose of this item is to request that the Board approve redirecting the 2013-2014 Technology CIP funds to upgrade the routers that serve the district.

BACKGROUND: The district's network was designed in 1994. The design has all schools connecting to Orange High School and going out to the world from the one router at OHS. With increased data requirements and different types of data flowing through our network, a new network topology is needed. Cisco Systems Inc. (Cisco) reviewed the network topology and proposed a design to maximize bandwidth and increase efficiencies in security and redundancy.

The budgetary figure suggested by Cisco for the complete upgrade of the infrastructure is \$889,714. Cisco put forth a proposal that the upgrade could be divided into several phases dependent on funds available. Phase I would include the complete design programming, addition of a district router, and new replacement routers with higher capacities and routing capabilities at Orange and Cedar Ridge High School.

At the November 6 Superintendent Technology Advisory meeting the new network design prints and hardware information was presented to the Council. The Advisory Council agreed the design was appropriate to meet future needs of the district and would allow for the critical need of redundancy.

This agenda item was tabled at the March 10, 2014 board meeting and is being brought back for presentation.

FINANCIAL IMPACT: The 2013-2014 approved budget allotted \$360,555 from the Technology CIP fund for the elementary devices in Phase 3 of the Digital Conversion.

Phase I of a network upgrade (\$110,000) would be paid from that existing funding.

No additional funding is requested.

RECOMMENDATION: The Superintendent recommends that the Board approve repurposing the \$110,000 to upgrade the district infrastructure that currently exists at Orange High School.

Original Proposed Funding Plan for DCS 1:1 Laptop Initiative--Revised 2/24/14

(Lenovo laptop stay at school option)

	FY 2011-12	FY 2012-13	FY 2013-14 Original	FY 2013-2014 Revised 10/14/2013	FY 2013-2014 Requested Revision 2/24/14	FY 2014-15	FY 2015-16	Total
Funding Sources								
Technology Funds CIP	\$ 250,000		\$ 360,555 (3)		\$179,000			\$ 429,000
Technology Funds CIP--Wireless	\$ 125,000	\$ 135,000	\$ 135,000	\$135,000	\$135,000			\$ 395,000
Reallocation of State CTE Funds	\$ 16,200							\$ 16,200
State Textbook Funds	\$ 142,000		\$ 360,555 (3)					\$ 142,000
Quarter Cent sales tax		\$ 490,000 (2)	\$ 490,000	\$490,000	\$490,000	\$ 490,000	\$ 490,000	\$ 1,960,000
Various Curriculum & Instruction budgets		\$ 181,097 (2)	\$ 181,097	\$181,097	\$181,097	\$ 181,097	\$ 181,097	\$ 724,388
State Classroom Supplies and Materials			\$ 36,000 (4)					\$ -
Capital Fund Balance		\$ 205,000	\$ 58,050	\$815,160 (5)	\$815,160			\$ 1,020,160
Usage Fee			\$ 36,000 (1)	\$36,000	\$36,000	\$ 36,000	\$ 36,000	\$ 108,000
Total Funding Sources	\$ 533,200	\$ 1,011,097	\$ 1,657,257	\$1,657,257	\$1,836,257	\$ 707,097	\$ 707,097	\$ 4,794,748 ***
								\$ 4,794,748

	FY 2011-12	FY 2012-13	FY 2013-14 Original	FY 2013-2014 Revised 10/14/2013	FY 2013-2014 Requested Revision 2/24/14	FY 2014-15	FY 2015-16	Total
Implementation Costs								
Phase 1-Laptop Purchase - K-12 Certified Staff	\$ 408,200							\$ 408,200
Phase 2 - Annual Lease/Purchase Payment for Purchase of Grades 6 - 12 Laptops		\$ 671,097 (2)	\$ 671,097	\$671,097	\$671,097	\$ 671,097	\$ 671,097	\$ 2,684,388
Phase 2 - Backpacks/Sleeves- Grades 6-12		\$ 205,000	\$ 36,000 (1)	\$36,000	\$36,000	\$ 36,000	\$ 36,000	\$ 313,000
Phase 3 - Laptops for Grades 4-5			\$ 721,110 (3)	\$721,110 (5)	\$721,110			\$ 721,110
Phase 3 - Laptops for all Grade 3's					\$179,000			\$ 179,000
Phase 3 - Batteries			\$ 36,000 (4)	\$36,000 (5)	\$36,000			\$ 36,000
Phase 3 -Carts for Classrooms Grades 4 & 5			\$ 58,050	\$58,050 (5)	\$58,050			\$ 58,050
Wireless Infrastructure Upgrade	\$ 125,000	\$ 135,000	\$ 135,000	\$135,000	\$135,000			\$ 395,000
Total Implementation Cost	\$ 533,200	\$ 1,011,097	\$ 1,657,257	\$1,657,257	\$1,836,257	\$ 707,097	\$ 707,097	\$ 4,794,748 ***
								\$ 4,794,748

(1) 2013-2014 Backpack amount covers 600 rising 6th grade students and sleeves for 600 rising 9th grade students .

\$ 4,794,748

(2) Quarter cent sales tax plus funds from various C&I budgets will fund the annual lease payments.

(3) The elementary devices will be paid from Technology CIP and State Textbook funds. 2013-2014, Textbook Planning Allotment: \$419,317; Actual Allotment, \$106,607.

(4) State Classroom Supplies and Materials will increase next year: 2012-13, \$248,748; 2013-14, DPI Planning Allotments,\$444,582; Actual Allotment, \$216,934.

(5) Capital Fund Balance (\$815,160) approved 10/24/14.

**These amounts are included in the budgeted expenses for the district.

Network**	\$ 45,000	\$ 45,000	\$ 45,000	\$45,000	\$155,000	\$ 45,000	\$ 45,000	\$ 335,000
Digital resources (Textbook funds)**	\$ 120,000	\$ 120,000	\$ 120,000	\$106,607	\$106,607	\$ 120,000	\$ 120,000	\$ 586,607

***This total used the amounts in the "Budget Amendment Requested 2/24/14" column (\$1,800,257) for the 2013-2014 school year amount to add to the grand Total Funding Sources and Total Implementation Cost.

Note: The \$360,555 from Technology Funds CIP in the 2013-2014 Original Plan are being requested to be repurposed: \$179,000, 3rd Grade elementary laptops; \$110,000, Phase I infrastructure/network upgrade; \$71,555, allotments to schools.



Business Case

Initiative:
Infrastructure/Network Upgrade—Phase I

Implementation Timeline and Budget Needed

2013-2014	Amount	Notes
Upgrade older routers at Orange and Cedar Ridge High Schools and add a district router to maximize bandwidth and increase efficiencies in security and redundancy.	\$110,000 from 2013-2014 Technology CIP	This expense represents only one phase of a complete upgrade of the network--design and hardware. The complete network upgrade budgetary total provided by Cisco Systems, Inc. in 2013 is estimated at \$889,714. This upgrade would be a multi-year upgrade. Changing technologies will dictate future phases.

Expected Results

Maximize bandwidth and increase efficiencies in security, redundancy and stability of the network.

Evidence or Reasoning for this Recommendation

The end of life of the current Cisco switches/routers used in the district was 2011. These switches were more than adequate to do the routing for the 3000+ devices and the 1100 phones the system had in 2005 but a severe strain has been put on the switches due to the growth of devices on the network to the current level of 9,200+ computers/laptops and 1200 phones.

Under normal operating conditions the current switching hardware central processing unit (CPU) is consistently being utilized at 90-100% on a daily basis. When the hardware is consistently performing at these rates it will further decrease the life of the hardware as well as continually degrade network performance.

There is no way to predict exactly when the current structure may suffer a fatal loss. In order to prevent a complete loss of networking capability, an update at this time is advisable.