

**Maine School Administrative District #75
Infrastructure Maintenance of Effort Plan Budget**

Infrastructure needs across the district have been analyzed to determine the areas in the district where we must pay close attention. In most cases the issues identified below are currently causing end user frustration, down time, and poor functionality. Upgrading or replacing existing systems can resolve issues and help build reliable and consistently performing systems. The budget below does not take into consideration future expansion or wholesale performance and or service upgrades. The budget is designed to continue the support of the existing infrastructure and service basic network service expectations.

Systems that are too costly to maintain may need to be removed and or scaled back to a level that the district can financially support and are reliable and accessible to end users, albeit with documented limitations. Projected budgets needs beyond 04-05 are based on known requirements and are intended to be an estimate only. We are currently undergoing a Total Cost of Ownership study to assist in long-term financial projections

A current analysis of the infrastructure budget requirements is identified below.

	FY04-05	FY 05-06	Recurring
Print Services	23,500	23,500	23,500
Servers	32,000	52,000	28,000
Wide Area Network	39,600	28,800	24,300
Local Area Network	85,700	16,150	17,850
Internet	7,800	7,800	7,800
Software - AppleWorks, MS Office	10,000	16,350	23,000
Total	\$198,600	\$144,600	\$124,450

Actual Budget for FY04-05 (-\$65,950 less than requirements)

In order to execute the existing plan based on the available budget, MSAD No. 75 will work diligently towards consolidation of services, reduction of the cost of technology ownership, and a long-term replacement cycle for LANs and WANs that fits within the budget.

	FY04-05
Print Services	\$23,500
Server Hardware	\$28,000
Wide Area Network Hardware	\$24,300
Local Area Network Hardware	\$17,850
Local Area Network Wiring	\$29,000
Software	\$10,000
Total	\$132,650

Print Services

Print services in MSAD#75 are standardized on Hewlett Packard 4000 series network laser printers. The useful life cycle of laser printers purchased by the district is approximately 8 years. This approximation may require adjustment in the near future as the number of workstations increases in the district and as technology and expectations change. Specifically, the increase in utilization from the 625 new iBooks at the middle school will impact on the installed base of printers. Currently, 30 printers exceed this cycle and require replacement. This replacement can be scheduled over two years using a 16-printer per/year replacement schedule based on the 130 printers currently deployed. In many cases these printers are causing significant compatibility issues with newer hardware and software resulting in student and staff frustration. Many of these printers are over 10 years old. Printer replacement schedule follows below:

FY04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY12-13
29	5	0	0	39	23	15	3	5
\$48,600								
16	16	16	16	16	16	16	16	16
\$23,500	\$23,500	\$23,500	\$23,500	\$23,500	\$23,500	\$23,500	\$23,500	\$23,500

To save financial resources we can reduce the number of supported print devices from 130 to 100 by providing print services in shared locations where all users can access the resource. This saves a significant amount of support resources in addition to the upfront replacement costs. When applicable, financial and support resources directed to support printing will be redirected towards non-printing communications services. The print services budget does not cover paper and toner expenses. Individual departments and schools allocate resources to provide these consumables. MSAD No. 75 is working towards eliminating and or greatly reducing the requirements for document printing while improving communications and collaboration. (See [Appendix "Optimal Printer Replacement Schedule"](#))

Servers

Servers across the district provide the necessary services to make computers function and be useful in a networked environment. As workstations increase, and the need for applications and data rises, servers must be replaced regularly. Advances in network stability and performance will decrease the total number of servers, however, the need for more advanced software will raise the cost of individual server devices. The increase in Wide Area Network performance will allow several servers to be removed from local schools and consolidated at the district office. The replacement schedule below does not include the Library card catalog service. A separate consolidation plan incorporates the service these devices provide.

The replacement cycle currently calls for 13 servers to be replaced in fiscal year 05-06. The Wide Area Network equipment replacement may allow us to relocate servers to a central location allowing for three to five servers to be removed from service. A total of \$28,000 in Funding for server replacement is available allowing for the replacement of 7 servers per year. MSAD No. 75 will strive to reduce expenses and infrastructure by consolidating services on fewer server devices. (See [Appendix "Server Replacement Plan"](#))

FY04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY12-13	FY13-14
8	13	8	8	8	8	8	8	8	8
\$32,000	\$52,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000	\$32,000
7	7	7	7	7	7	7	7	7	7
\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000	\$28,000

LAN Hardware

Local Area Network needs vary across the district. The growth in computer technology has stressed local networks beyond their sustainability. Networks designed to support 30-50 computers are currently supporting 50-100 devices. Issues with local networks cause significant performance and reliability issues at the workstation. Many issues are due to wiring and equipment outside of current technology standards and capabilities.

The Bowdoinham School is most in need for network wiring. The current infrastructure consists of wiring and termination equipment outside of the current technical specification and is not designed to support the existing computer technology. The result is very poor performance and reliability of computer systems. The building requires a complete renovation to the existing network infrastructure at a cost of \$40,300. Additionally a considerable amount of wiring and LAN equipment upgrades are required to continue basic functionality at Mt Ararat High School, Williams-Cone School, and Woodside School. The district office currently supports most of the district services. The network is currently not capable of supporting the demand. Additional equipment and replacement devices will make the services at the district office more reliable. Ongoing maintenance costs include battery and LAN gear replacements. Expected costs for battery replacements may decrease if servers are relocated from local sites to district office.

Recurring costs of \$17,850 per year are accounted for in the district budget beginning FY04-05. Capital improvements to infrastructure are accounted for up to \$29,000 per year allowing for a 3-year replacement plan of the most critical Local Area Network needs in the district. Additional requirements will be identified as equipment in other locations ages.

		MTA	MAM	BCS	BHM	WES	WCS	HIS	WHS	District Office
FY04-05	\$88,800	10250	3100	800	40300	10250	9000	2600	2000	10500
Ongoing Costs	\$17,850	3450	7250	1050	750	750	750	750	400	2700

WAN Hardware

The Community of Learners Project built a high speed Wide Area Network between MSAD#75 sites. The network allows each school to connect and share information across the district as well as providing access to the Internet. This network has served the district well over the past 7 years. Equipment used to provide the WAN service is now due for replacement and upgrade to support the increased utilization in network services and to retire aged equipment. To begin the project, we will replace equipment at sites that require higher bandwidth. The district office is the location of the majority of servers and is the location of the district Internet connection. All sites connect to the district office to obtain basic network functionality, email, Abante Report Card service, etc. Upgrading the district office equipment will increase performance in addition to replacing the aging hardware. The Bowdoin Central, Woodside, and Williams-Cone schools currently have the greatest number of computers and higher bandwidth needs.

FY04-05	FY 05-06	FY 06-07	FY 07-08
District Office	Bowdoin Central		
Williams-Cone			
Woodside			
\$39,600	\$28,800	\$28,800	\$24,300

This equipment has the capability of tying existing phone systems into the Wide Area Network allowing sites to share data connections. Additionally, the increased expenses may be partially covered by the E-Rate program if available.

Recurring costs of \$24,300 per year are accounted for in the district budget beginning FY04-05. This allows for a 4-year replacement plan of the most critical Wide Area Network needs in the district. Additional requirements will be identified as equipment in other locations ages.

Internet

Internet access is currently available through a T-1 connection providing 1.44Megabits (1,440 Bits) of throughput. Home cable modem or DSL connections are currently available at a rate of 256 up to 2 Megabits. Internet performance at home using this data rate can outperform access provided at school. Our current connection is insufficient in providing services to MSAD#75 network users. Internet performance is often reduced significantly during the school day when the connection is simply over utilized. As a temporary solution the technology department negotiated with Suscom Cable an increase to 4 Megabits in Internet bandwidth from the end of December through the end of June at no additional cost. This allows us time to plan, budget and procure higher speed connection for the next fiscal year. Current estimates for doubling our existing T-1 bandwidth and continuing with the new rate of 4 Megabits is \$650.00 per month in addition to our current expenses.

Software

Software licenses for Desktop Productivity Packages (AppleWorks and Microsoft Office) are currently not budgeted. These applications have traditionally been purchased at the same time a new computer was procured.

This practice causes issues with incompatible software versions. New versions of productivity package software are made available every 2-3 years. When we are no longer able to purchase an old version license we purchase the new licenses and attempt to support the old software on the new hardware. We have been somewhat successful in limiting the impact of multiple versions of software, however, we often run into issues where newer equipment and operating systems will not run the older software versions. We also have found that older equipment gets to a point in its life cycle where it will no longer run the latest software. The result is a mix of AppleWorks 4, AppleWorks 5, and AppleWorks 6 along with Microsoft Office 97, Office 2000, and Office XP. When staff and students attempt to share a document using email or a file server, the result can be frustrating unless each computer utilized has the same software and version or a document conversion process can be followed.

To resolve the Microsoft Office dilemma, the technology department has embarked on a trial of Open Office software that is available free to schools and is compatible with Microsoft office. If this project is successful it will greatly reduce the software licensing needs of the district. Current license costs for Microsoft Office are \$54.50 per seat for three years. We currently require approximately 600 Microsoft Licenses for a total of \$32,700. Fifty percent of the license requirements are budgeted each year beginning in the 2005-2006 fiscal year as a potential cost.

AppleWorks licenses are currently available at \$19.00 each. We currently maintain approximately 1,200 licenses. Current licensing requirements for AppleWorks is \$9,800.00. This allows all workstations in the district access to the same version of AppleWorks enabling computer users to share documents.