

Madison Metropolitan School District
Technical Services Division
Annual Report: School Year 2003-2004 (F04)

Despite ongoing concerns about under-funding for technology, the Technical Services Division has moved the District forward in several areas of infrastructure, desktop and instructional computing, security and business application support. Key areas of our Division's work, progress made over the past year, and areas of focus in the year ahead are presented below. [Attachment 1 is 4 linked MSProject files serving as an outline of Technical Services Division work used by our staff to facilitate internal communication.] In addition, we posted the District's Technology Plan, approved by the BOE and submitted to DPI in June 2003 on the District's Internet site at <http://www.madison.k12.wi.us/techplan/>. Key conclusions and recommendations are provided at the end of this report.

1. Infrastructure:

A. WAN:

- switches: [see Attachment 2 for progress & costs/bldg]
 - \$271K budgeted in F03 (but mainly installed in F04): Chavez, Crestwood, Lapham, VanHise, Cherokee, Hamilton & LaFollette
 - \$463K was spent in F04: East, Memorial, West, Doyle, Pflaum (West actually being done 3rd wk of June04)
- **F05 Plans:** \$230K is budgeted in F05 (\$200K from Technical Services, \$30K from Bldg.Serv.); priority and scheduling will be done in collaboration with Bldg.Serv.
- RFP: collaborated with Bldg.Serv. to generate RFP for WAN upgrade options, the objective being to get 1GB fiber runs between Doyle & Pflaum & all 4 high schools; connectivity costs deemed prohibitive at this time
- **F05 Plans:** continue efforts with WiscNet and others to upgrade a draft of MMSD's projected WAN capacity needs, including assessing alternatives to how other districts might use dedicated access to our business applications; alternatives will include determining if/how changes to WI's BadgerNet Converged Network might help address our needs

B. LAN's:

- Servers [see Attachment 3 for a server list including hardware specs, O/S & backup info]
 - a total of 39 servers were deployed in MMSD in F04, 36 of which were new purchases (16 replaced older servers, but 20 are additions to our server inventory; 22 were Novell servers, 15 were Win2000, 1 each were Linux and AS/400; see Attachment 4 for a list of server changes in F04 and F05)
 - 26 of the servers deployed in F04 were required for new business applications & email system upgrade
- **F05 Plans:** \$38,000 is budgeted to replace 11 Novell building-based servers in F05, in:

Black Hawk	Huegel	Stephens
Cherokee	Pflaum	Thoreau
Hamilton	Sennett	Van Hise
Hoyt	Spring Harbor	

In addition, 2 servers will be purchased for our library system upgrade and 2 other servers will be purchased to support WAN infrastructure and Web-based student data access. see Attachment 4
- **F05 Plans:** All MicroTechs are receiving 3 days of training each in the use of ZenWorks 4 Desktops in June04-July05 and will be upgrading associated software on Novell servers to improve security and the use of network utilities
- Computer room upgrades were performed in Dec.03 and June04 to provide electrical, UPS, network access and phone line infrastructure improvements required to support the new GroupWise servers in Jan.04 as well as the new Honeywell, Kronos, eSchool, Hyperion and Lawson servers being installed in June & July04. Costs of these computer room upgrades in Dec.03 were \$xxx and \$18,775 in June04; (a floor plan map will be available by then end of June and will be added to the Technical Services Disaster Recovery Plan)

C. Backup System

- Tivoli: in F04 we spent \$33,000 on Tivoli software, 1st yr maintenance and related AS/400 BRMS software; this system requires software installs on every server and was deployed in stages; currently 90% of our 120 servers are backed up via Tivoli; this system:
 - reduces time required for hard drive system restores by over 70%
 - reduces time required to perform server backups by 80%, thereby enabling us to backup all systems using Tivoli with at least incrementals, nightly [previously, many building-based Novell servers only had incrementals performed monthly]

- through data compression, will save Technical Services over \$15,000 per year by reducing our use of backup tapes
- GWArchive: approval to acquire and implement this critical system to enable space & cost efficient storage of, search-ability and access to GroupWise email occurred in May2004; installation began on 10June; this was fully functional on 18June; **this system is critical to enable MMSD to respond to any Public Records request involving email**

D. Security

- consulting reviews: although \$32,000 was spent on WAN & LAN security assessments in F03, just under \$11,000 was spent in F04 for security related consulting in response to virus attacks, anti-virus replacement planning and Internet email protection
 - **F05 Plans:** Although unbudgeted in F05, likely, a new WAN & LAN security review will need to be performed as a consequence of many changes to our server environment, anti-virus replacement and deployment of Web-enabled applications; costs for this review may exceed \$35,000.
- antivirus:
 - due to current email, server and desktop defenses, MMSD avoided most major F04 service disruptions encountered by other school districts and state agencies caused by rapidly evolving versions of Sasser, Blaster, Sobig, and MyDoom attacks and worked with WiscNet to halt a major DOS attack hitting many WI school districts in Oct03; new versions of NetSky and Bagle did get through in Feb. but several rapid post infection responses re-cleaned and restored MMSD systems
 - after Command Antivirus (CAV) engine upgrade in Jan.04, Win98 desktop NAL & login problems and server backup problems with Tivoli were traced to CAV; consulting services in Mar. and testing in Mar.-Apr. **resulted in the decision to switch to Symantec with District-wide deployment in June04;** original pricing, with educational discount was projected to be \$75,000 to \$90,000; Technical Services was able to negotiate down the cost to \$27,670, payable 1July, comparable to our projected F05 Command AV cost
 - **F05 Plans:** continue Symantec deployments across MMSD in June & monitor for negative desktop & server impact in June-Aug.04; insure software auto-updates keep current
- Email: steps were taken to improve protection from viruses coming in through email attachments in Jan.-Mar.04 in collaboration with Berbee; beginning in Mar.04, all inbound messaged coming through our EPO (Linux Email Post Office) had attachments shaved off when file extensions were on a list identified by security vendors as high risk
- spam killing & tagging [see Attachment 5 for current info from USInternet]; In Feb.04, in response to rapidly raising virus infections from email and explosive growth in spam, Technical Services contracted with USInternet to implement their email virus killers and deflect spam. On our worst days in Mar.04, over 6,000 inbound emails were virused and over 15,000 inbound messages were identified as spam. Killing & deflecting all this inbound traffic dramatically saved end-user time & reduced storage volume. **Following our request through Clarence Sherrod and Frank Crisafi from the state AG's office, Ms.Flanagan, Assist.AG confirmed on 15Mar.04 that inbound spam would NOT be subject to records retention standards and need not be archived. It should be noted that WiscNet addressed this issue by May2004 offering spam killing as a billable service which would have cost MMSD \$70,000 to use. Technical Services negotiated with USInternet for a cost of \$690/mo = \$8,280/yr.**
- School physical security systems have been upgraded in F04 and consist of 2 parts:
 - remote police access to the Madison Police Dept. uses our WAN to connect via VPN & Citrix
 - camera systems at East & Memorial use Honeywell closed circuit TV; West and La Follette use Web enabled cams but will be changing to the Honeywell system in F05
- Safe Internet use: a draft flier to help teachers present Internet use safety issues to students was distributed to Computer Contacts in May04 [see Attachment 6]; feedback from Computer Contacts will guide changes
 - **F05 Plans:** provide Internet Safety brochure in Aug.2004 to help teachers be more informed teaching children safe computer use

2. Desktop Environment:

Attachment 7 is a summary, by building, of MMSD's desktop (& laptop) inventory as of Mar.2004. A summary of all acquisitions is shown in the table to the far right. Meanwhile, 2,000 computers were retired from inventory.

Removed	Desktops	Laptops	Total:
all PC	1175	152	1327
APPLE	669	12	681
Total:	1836	164	2000

F04 Computer Acq'd:	
Admin	429
Inst	1324
LMC	23
Sp Ed	29
Grand Total	1805

However, we actually had a net increase in district inventory by nearly 200 machines, to 8,770. (About 400 old computers not previously in our inventory were found in various bldgs in F04, entered into our inventory, but subsequently were retired.)

A. Admin PCs

- 330 new PCs running XP were purchased and deployed to support upgrades to the financial application system (Dec.03-Feb04); this deployment enabled 281 PCs to be cascaded for instructional use (58 were distributed among all 4 high schools, 124 were distributed among 6 middle schools and 84 went to 7 elementary schools); 181 very old computers were removed from service (123 PCs and 58 Macs) for a net inventory increase of 149 units [see Attachment 8 for summary]

B. Instructional PCs

- Funded by TEACH Block Grant funds (Feb.2003), F04 acquisitions included 818 refurbis and 74 new PCs [see Attachment 9 for the Aug.03 version of the Teach 03 budget]; there have been additional computer acquisitions from various funding sources (building & dept. level & competitive grants) plus Technical Services purchased 173 used refurbis from the City of Madison for \$10,500 and deployed these to instructional sites.

- MMSD also acquired 232 donations in F04, from the following donors:

Virchow Krause	2	US Forest Products Lab	15
WI Dept. of R&L	56	Alliant Energy	10
US Dept. of Justice	18	American Family	58
WI DOT	15	Kiwanis Club of Madison	29

- Technical Services has maintained a strategy to guide deployments of computers based on 3 key criteria: which schools have the most old technology, which schools are trying to migrate to a single platform environment and which sites are linking specific technology needs to critical instructional priorities. In addition, Technical Services has compared the Free&Reduced Lunch rates of schools to prioritize deployments based on this measure of poverty. Attachment 10 is a graph of % old computers vs. Free&Reduced Lunch, by building (along with a following table of these data as reference). Technical Services began using this kind of comparison for planning purposes in the fall of 2002 [see Attachment 11 which is a graph used to guide F04 deployments]. Key results achieved in F04 include:

- ✓ Avg. % old dropped from 22.7% to 19.3%; this was primarily a consequence of 3 things:
 - a. District purchases of new PCs to support our new financial application
 - b. District purchases, via TEACH Block Grant funds from Feb.03
 - c. Defining “old” as under 300 MHz (when machines under 500 MHz are often very under powered for network logins, use of the NAL, antivirus software and Internet access)
- ✓ Targeted schools moved left on the graph as we reduced portions of their inventory defined as old; sites impacted from this deployment strategy are listed below:

Sites moving from above Avg old to below Avg		Sites still above Avg but relatively improved		Sites still remaining as targets for F05	
Shorewood	Black H.	Glendale	East	Falk	Toki
Lapham	Brearly	Memorial	La Follette		
Emerson	Franklin	West	Van Hise		

F05 Plans: new targeted sites, as any purchases or cascades become available, based on their relative positions on our graph are: Kennedy, Elvehjem, Randall, Muir, Wright and Lincoln; it is important to note that as of June2004, all F05 funding currently budgeted for both administrative and instructional computers is \$40,000. This funding issue will be discussed further in our Annual Report Conclusions at the end of this report.

F05 Plans: other funding sources (building, program area & grants) have funded PC acquisitions for summer 2004 deployments. These include:

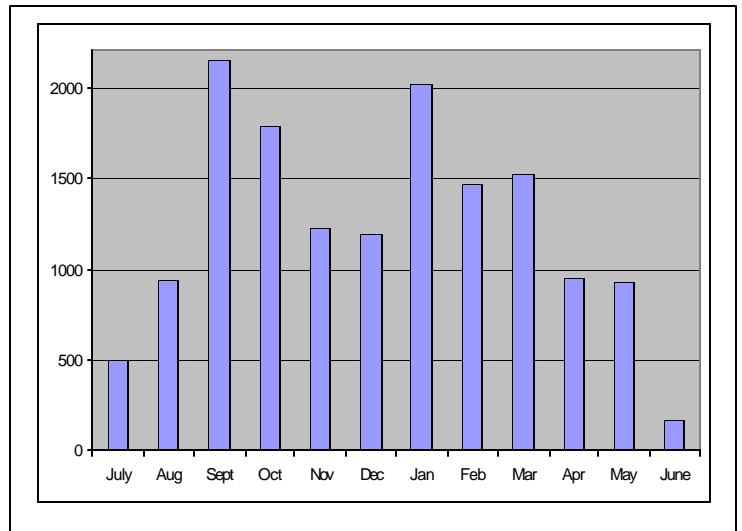
Building:	# of units:	Notes:
East	30	likely will be additional machines, not generating removals or cascades
Glendale	74	Reading Improvement competitive grant; will enable cascades to other schools & the discard of an equal # of old computers
Special Ed	200	PCs ordered w/o monitors: may enable the discard of older CPUs
Hawthorne	31	
Total:	335	

F05 Plans: Technical Services has \$40,000 budgeted for all instructional and administrative computers for F05, so we will continue considering strategies to generate acquisitions from other sources, including donations.

F05 Plans: Improving the ease with which Technical Services staff can maintain current computer inventory remains an important goal. We plan to acquire hand held bar code scanners in summer 2004 that will integrate asset information with Lawson.

C. HelpDesk support

- There were 14,845 recorded Technical Services HelpDesk WorkOrders created in F04 (as of 7June04); the distribution of these calls, by month, is shown at the right (predictably, Sept. is high; Jan.04 was high due to our GroupWise migration and changes in login/pswd procedures)
- A distribution of WorkOrder frequency by categories of calls (see Attachment 12) shows that nearly 60% of all WorkOrders pertain to desktop computer hardware & software; this reflects installs and may not be a valuable way to discriminate types of work to proactively plan technical responses or training efforts



F05 Plans: A distribution of WorkOrders by category, by building (see Attachment 13) will be reviewed in July as a planning tool for work or training recommendations

F05 Plans: The MicroTech Supervisors and MicroTech staff will review data from our WorkOrder system to make recommendations regarding how categories of work or other features of it can become better tools to plan work; as of May2004, earlier expectations that the Technical Services WorkOrder system would become part of the Lawson system will not be implemented so further efforts will be undertaken to improve how we can use what we have

3. Applications' Environment:

A. Business: As presented in 1. Infrastructure: B. LANs: Servers, above, Technical Services has devoted considerable effort in F04 to provide infrastructure support for upgrades to MMSD business technologies including finance, HR, Building Services, Time Clock and Food Services, in addition to the District's library systems.

F05 Plans: Technical Services will continue efforts to successfully implement all business related technology initiatives and help in the creative efforts to supplement funding support through collaborative efforts with other school districts.

B. Email: Use of Eudora by MMSD employees for Internet email was finally rendered unnecessary by converting all MMSD employees to GroupWise (& GroupWise was simultaneously upgraded from GW 5.5 to GW 6.5), effective 1Jan.2004. Further, GW Web was deployed, enabling remote access to GW accounts. [see Attachment 14, A,B,C for information posted on our Intranet site, a copy of info sent to all staff and a copy of the FAQ regarding the GroupWise migration effort.] This was a significant achievement of F04.

F05 Plans: insure the full and effective use of GWArchive to insure MMSDs ability to respond efficiently to Public Records requests

C. Data Admin: In collaboration with Steve Doty & Bill Thompson, Technical Services staff have sought every opportunity to support data access and data security needs; demonstrated successes in F04 included the completion of the GroupWise migration and changes to application logins on schedule and our work preparing for the Web-enabling of business and student applications using AS/400 hosted data.

F05 Plans: Technical Services will continue efforts to facilitate the secure Web-enabling of business and student applications

4. Training:

A. Technical: see Attachment 15 A,B,C for summaries of F03, F04 and F05 Technical Services Division training; these summaries are considered especially important in lieu of MTI concerns expressed in May2004 that there was insufficient support for technical training within our Division

F05 Plans: To insure that Technical Services remains dedicated to MMSDs Strategic Priorities as posted at <http://www.madison.k12.wi.us/topics/fa/priorities.htm>, **Staff Effectiveness** (recruiting,

developing and retaining a highly competent workforce, we will continue to support staff training, and document and communicate our efforts [Attachment 15, C is our F05 tracking tool]

B. End-users:

- Technical Services purchased 500 GroupWise 6.5, 4 column, folded Quick Reference Guide cards from Messaging Architects and distributed them across the district in Jan. to aid with end-user training
- Technical Services covered the cost of supporting Tina Krouth, an MMSD middle school teacher, in her efforts to provide individual school-based and Hoyt-based end-user training in GroupWise, electronic file management, and Mac to PC migration

Other issues/projects:

eRate: Yr5 (ending June03: revenue Aug-Dec.2003): generated \$283,188.11 counting revenue & discounts

F05 Plans:

Yr6 (ending June04: revenue Aug-Dec.2004): should be approx. \$416,000 in revenue and discounts

Yr7 (ending June05): should provide approx. \$393,000 in revenue & discounts [see Attachment 16]; SLD investigations of MMSD 471s involved over 25 emails, FAXes and phone calls between Mar.& June2004

Staff organization:

- an Organization Chart was posted to <http://dww.madison.k12.wi.us/ts/mission.htm> in July 2003 reflecting retirements of Lynn Lum, JoAnn Bradley and Mary Ann Schaalma, and then it was updated in Sept. reflecting the retirement Donna Harper and then the departure of Janice Schmid in May 2004 [Attachment 17 is our newest OrgChart]; this reflected a loss of 5 females from our Division in 1 year; during this year we did promote 2 male MicroTechs, Chris Stoner to Supervisor and Dennie Jeanquart to Specialist and hire 2 male MicroTechs Moses Her and Brian Rohde. We have a net reduction of 3 staff for F04.
- see Attachment 18 for our current list of 25 employees

F05 Plans: Technical Services will be seeking 2 Interns to gain experience in our division in the coming year

- Although we budgeted for \$4,000 for OverTime work for F04, we have actually spent nearly \$27,000 as of 11June04. Attachment 19 shows a distribution of this work by work category, by employee and by month. Based on the type of work requiring OT (including email, backups, SubFinder, printing functions and some Lawson & server/network work) we can project that nearly half of this type of work will NOT need to be performed in F05; the highest OT demanding months were Nov.03-Feb.04, largely due to email and server work

F05 Plans: Although no (?) money is line budgeted for OT in the draft F05 Technical Services budget, we can expect OT to exceed \$10,000 based on projected types of server and security work that must be performed; these costs are likely to impact our most discretionary line allocated for desktop computing

Budget F05:

- an upgraded draft summary of the F05 Technical Services budget will be available in July04
- “non-standard” technology Requisitions approved by Technical Services have totaled \$337,000 in F04, down from over \$500,000 in F03; this is likely the consequence of 2 things: informing Purchasing of more “standard” defined products and a reduction in spending by other departments; nearly \$100,000 of this went to support an on-line training initiative by T&L (ck) [see Attachment 20 for a summary of non-standard technology purchases by category, by bldg]

F05 Plans: Technical Services will be reviewing how we might use the Lawson system to reduce the frequency of the need to seek Technical Services approval for technology purchases by pre-approving some categories of requests and also increasing the speed by which such approval can be given. (It is also expected that reviewing technology requests and standardizing some product lines, such as for Spec.Ed, will be easier through Lawson.)

Graphic Arts issue:

- in June2003, Technical Services recommended avoiding focusing on 1 technical soln for all sites due to the fact that different sites were using different technologies to address similar needs; Technical Services retains this view, although a set of District definitions for student achievement in Graphic Arts seems highly desirable
- although expected, no definition of summary of expected “graphic arts” skills nor technologies required to support them was provided by the T&L Fine Arts Coordinator and this issue remains essentially tabled
- Media Production initiated a Middle School, after school, video production initiative encouraging the acquisition of non-networked Macintosh laptop computers to support their initiative; some desktops have since been purchased for this initiative and there has been interest in having these Internet accessible

F05 Plans: Technical Services will continue efforts to provide technical support for Graphic Arts needs and will make additional efforts with T&L staff to understand how these support requirements continue to evolve

Library data needs: During F04:

- 10,300+ holding records were purged from building-level Follett databases and the DRA database
- 21,700+ new holding records were added to DRA (NOT representing multiple copies of the same book within the same bldg), representing 2,093 new titles
- 24,826 existing DRA MARC records were updated/modified
- district-wide, MMSD currently has 274,858 titles and 811,181 holdings (excluding & overlapping with 20,231 titles and 22,767 holdings in Doyle's ERL/IMSC library)

F05 Plans: Technical Services looks forward to improving the quality of library holdings' data and our support for District librarians through our migration to SageBrush

AS/400 Production Printing:

- all financial and student data production printing is summarized on **Attachment 21**; this represented over 1,000,000 sheets

F05 Plans:

- changes to production printing, moving grade reporting and check printing out to buildings or other departments, is expected to reduce Technical Services production printing by the end of F05 by approx. 150,000 sheets/yr.
- once attendance scans are no longer done by Technical Services, this would further reduce production printing by approx. another 150,000 sheets/yr

Disaster Recovery planning:

F05 Plans:

- MMSD's IT disaster recovery plan will be updated in July 2004, reflecting changes in Doyle's LAN room

Key Conclusions & Recommendations:

In addition to the **F05 Plans** identified within each section of the **F04 Annual Report** above, there are some key areas of focus in the year ahead:

- A. Continue efforts to upgrade the quality of instructional computers across the district: Although continuing efforts to bring in computers through donations, purchasing refurbished machines and submitting proposals to competitive grants is fine, it is short-term and is NOT the way to reliably manage these key assets for instructional success. This **MUST** become an appropriate budget allocation to purchase or lease/purchase computers to insure a 4-5 year life cycle. Additional strategies to address this critical issue will be reviewed in June/July 2004 with the objective being to significantly change, in F05, MMSD's current desktop replacement approach.
- B. Continue efforts to upgrade the throughput of MMSD's WAN to:
 - improve the performance of data backups & server/desktop restores
 - enable the condensation of & efficiency improvements in server resources
 - prepare for increased throughput requirements for Internet use in instruction and business applications
- C. Improve network security through both the use of technology and the education of our users
- D. Continue efforts to improve the effective use of current technologies and the planning for technology enhancements through the collaboration of Technical Services with other District stakeholders