

Madison Metropolitan School District

Technical Services Division

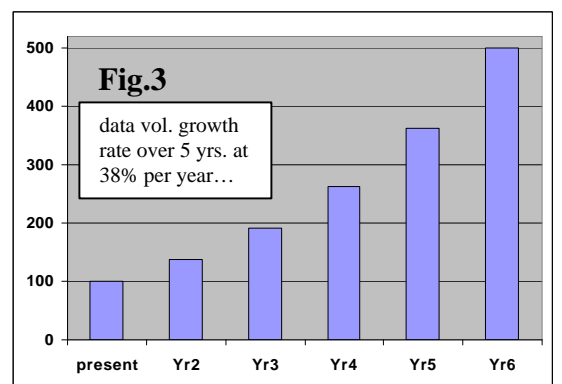
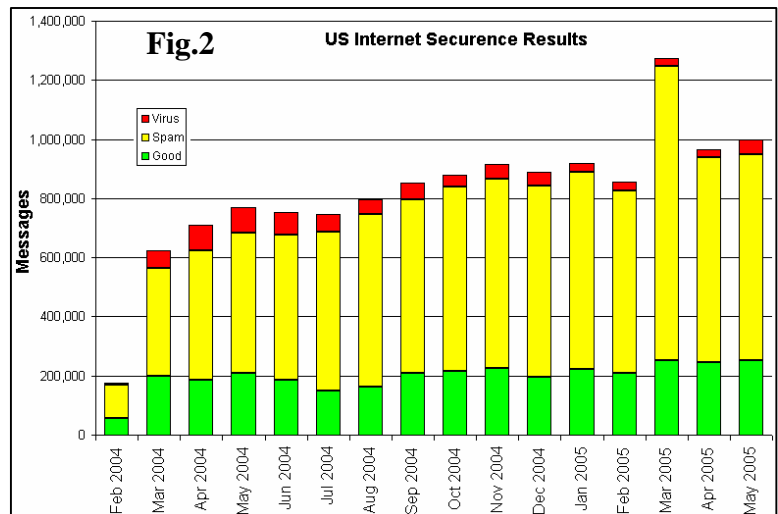
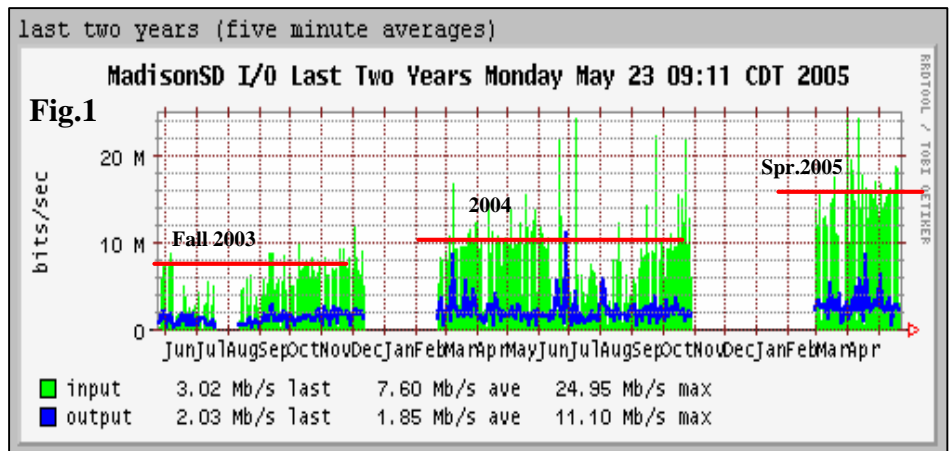
Annual Report: School Year 2004-2005 (F05) [submitted July05]

MMSD's last Technology Plan was presented to the BOE and filed with DPI in June 2003. In June 2004, MMSD's Technical Services Division provided an Annual Report reflecting progress on the 2003 plan. Both have been published on MMSD's Web site: www.madison.k12.wi.us/techplan. The report presented here represents our next annual review of progress and helps prepare us for the development of our next 5 year technology plan which must be filed with DPI by June 2006.

Over the past 18 months, MMSD has faced significant technical challenges including:

1. a doubling in Internet traffic, shown in Fig. 1 [missing segments are WiscNet data drops, not absence of traffic!]
2. a 60% increase in in-bound Internet email in the past year (from 600,000 inbound messages in Mar.04 to 1 million per month, with a spike exceeding 1.2 million in Mar.'05); see in Fig. 2
3. a 50% increase in spam and virus attacks in 1 year, with many viruses being more damaging and faster to propagate
4. a dramatic increase in data volume for backup & archiving; we now host 3.5 TB (Terabytes) [for comparison, all books in the largest library in the world, the U.S. Library of Congress, contains about 20 TB of text]; all this data must be replicated for disaster recovery purposes, but over half of it must be archived for legal compliance [& retained in a manner that is searchable for 7 yrs]; with industry standards predicting a growth of email storage of 38%/yr, in 5 yrs, as shown in Fig.3, email vol. could be 5x the current volume by 2009
5. a deployment of additional servers: in F05 we deployed 16 servers (counting 10 servers replacing retiring boxes) bringing MMSD's inventory to 119 servers (of over 9 O/S versions)
6. end-user expectations for secure and easy access to technical functions for instruction and business needs within buildings and from remote locations continues to expand, requiring both sophisticated in-house knowledge of our environment and rapid, cost effective collaboration with vendors

In response, Technical Services has continued to manage MMSD's technical infrastructure while evaluating system upgrades and new strategies to best leverage current assets. The following pages summarize progress through F05 and outline challenges and opportunities ahead. This serves as a guide and communication tool as well as a mechanism to generate feedback from customers throughout MMSD and our District community as we build our next District-wide Technology Plan.



This Technical Services Division Annual Report follows the general structure modeled in our June2004 annual report. 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. These Project files include hyperlinks to over 200 associated diaries, spreadsheets and Web sites, many of which contain additional hyperlinks to other associated documents, to help us collaborate on Division work.] Our Annual Reports from June2004 and this new one from June2005, are posted as updates to our Board approved, District Technology Plan [from June2003], on the District’s Internet site at <http://www.madison.k12.wi.us/techplan/>. Updated conclusions and recommendations are at the end of this report.

Background & key areas of responsibility:

The mission of the Technical Services Division is to provide the technical computing and data communications infrastructure required to support the district’s instructional mission and business functions.

Specific responsibilities include:

- Desktop environment: replacement & maintenance of 9,000+ desktop computers in 46 schools, 2 administrative sites and 15+ alternative sites; replacement & maintenance of all associated peripheral devices.
- LAN/WAN/Server environment: replacement & maintenance of 120 servers with multiple operating systems over 65+ sq.mi. area; upgrades & maintenance of all associated communications devices including hubs, switches, routers; maintenance of collaborative trouble-shooting with support vendors of WAN & Internet communications.
- Enterprise application management: provide and/or support Web-based applications, email systems, and library data systems and support enterprise business applications.
- Helpdesk: staff online and phone-based technical support services.
- Technical Research & Development: assess, plan, and coordinate deployment of upgrades to current or new hardware and software technologies.
- Production printing operations: support student and financial printing services requiring access to secure district data &/or secure forms.
- Security: maintain security for all technology systems and district data from hacker attack, virus contamination/corruption or inappropriate data access; maintain disaster recovery preparedness; maintain Internet access filtering systems; maintain data archiving system to enable access to electronic data for 7 years.
- Government Reporting: provide district nutrition program data to state and federal agencies.
- E-rate: insure district compliance with federal E-Rate guidelines; collaborate with Building Services and Administrative Services divisions in the preparation and administration of E-rate applicable communications’ vendors’ contracts; complete all E-rate forms

Division Highlights and Anticipated Challenges

1. Infrastructure:

A. WAN:

- switches: [see Attachment 2 for progress & costs/bldg] We are continuing the conversion of our mixed switch and hub ethernet LAN environment to one that is entirely switched. This provides critical improvements in server performance and data communication speed as well as improves network security. (With hubs, all data passing over a wire can be seen and intercepted. With the wide availability of easy to use and install packet sniffer/protocol analyzers, an ethernet network using hubs is a major vulnerability.) \$230,000 was spent in July2004 to acquire 338 Cisco 100 MB switches which were installed in 16 sites in July-Nov.2004; sites are listed at the right.

Elementary Schools:	Middle Schools:	Alternative Sites:
Allis	Black Hawk	Brearily
Emerson	Jefferson	Shabazz
Lincoln	O’Keeffe	
Lindbergh	Sennett	
Lowell	Sherman	
	Spring Harbor	
	Toki	
	Whitehorse	
	Wright	

In April 2005, an additional \$100,000 was allocated as an installment to be combined with another \$145,000 after 1July05 toward 272 more switches to complete remaining schools by fall 2005.

Note: Switches installed in F05 were mainly for middle schools, which use more lower cost classroom switches; F06 switches include more buildings, each of which requires a more expensive core switch and a lower portion of less expensive classroom switches (...& elementary schools also have fewer network connections and fewer computers)

F06 Plans: 1: following BOE approval of our purchasing request in July 2005, switches will be installed at all remaining District sites (20 elementary schools and 3 alternative sites) including:

Elvehjem	Falk	Franklin	Glendale	Gompers	Huegel	Kennedy
Lake View	Leopold	Marquette	Mendota	Midvale	Muir	Orchard Ridge
Randall	Sandburg	Schenk	Shorewood	Stephens	Thoreau	
Hoyt	Work Learn Park	Allied Drive				

** scheduling will be done in collaboration with building principals and Bldg.Serv. staff

- Deploying 1G throughput fiber between Doyle, Pflaum and 4 high schools remains a key objective to address growing throughput requirements for instructional and business needs in addition to enabling a more cost effective centralization of servers and improving efficiency of disaster recovery and data archive systems; cost estimates are \$300,000 start up and \$125,000/yr maintenance, the latter could be ~ 59% reimbursable through eRate funding, starting in July2006; This would allow the removal of the 4 aging AS400s hosted at high schools and allow replacement of 4 high school Novell servers and 1 at Pflaum Rd. by 1 rack mounted VMWare server host in Doyle. This would also greatly improve the infrastructure required to improve our disaster recovery system for ease of off-site data storage.

F06 Plans: 2: we will continue parallel efforts [see Attachment 3 for fiber information] including:

- our quest to seek state TEACH funding (following on an application for support Mark submitted to TEACH on 28Apr.2005) associated with grants from WI's BCN (BadgerNet Converged Network) might help address our needs
- continuing discussions with City of Madison to share fiber runs being planned for 2005-2012
- revisiting discussions with Bldg.Serv. regarding sharing expenses to initiate fiber deployments
- \$8,000 was spent in Dec.2005 to upgrade router hardware to enable deployment of updated Cisco software to improve network traffic management and security; additionally, all Novell servers were updated with SLP (Service Location Protocol) in spring 2005, a required precursor to additional router configuration updates

F06 Plans: 3: planned router configurations will be implemented in summer 2005

B. LAN's:

- Servers [see Attachment 4 for a server list including hardware specs, O/S & backup info]
 - in F05, we deployed 10 Novell servers at sites listed in the table, below to the right. Our spring2005 Novell server inventory consisted of 48 Novell 5.1 and 20 Novell 6.0 servers. New deployments scheduled for F05 were to be deployed with 6.0. In spring 2005, Novell announced support would be discontinued for 6.0 and they would only support 6.5. Planning 6.5, SP3 deployments required insuring all other Novell servers in our network were fully patched. Following completion of this work, installs proceeded.

Allied	Hoyt	Sennett
Black Hawk	Jefferson	Spring Harb.
Cherokee	Park Alt	
Hamilton	Pflaum	

- for business applications, 5 Windows servers were deployed & 4 were upgraded per the following list:
 - SageBrush: 2 library data Windows servers (in Oregon)
 - Kronos: 3 Windows server for HR time clock system
 - Hyperion: 2 Windows servers for budget management
 - eSchool: 2 Windows servers for substitute teacher use

F06 Plans: 4: \$49,500 is budgeted to replace 15 Novell building-based servers in F06, in sites listed in the table to the right

Note: Of our 68 Novell servers, 36 will have hardware warranties expire on 1July2005. Funding restrictions prevent replacing all of them. When/if failures occur, we will respond with spare parts &/or order parts as necessary, at the expense of other budgeted items.

High:	Middle:	Elementary:		
East	Stevens	Chavez	Lindbergh	Thoreau
La Follette		Franklin	Marquette	VanHise
Memorial		Huegel	Mendota	
West		Leopold	Sandberg	

- Following an evaluation process in fall2005, we deployed our 1st VMWare ESX multi-server environment in our DMZ in December 2004 (VMWare allows us to consolidate low & moderately utilized servers, saving costs of additional server hardware, network equipment, electrical & UPS capacity, and rack space; we can also eliminate time to acquire new server equipment so we can provide services more quickly when needs arise); applications hosted by June05 include:
 1. PIX Firewall logging server
 2. MealPay (for Food Services)

3. Web-based Employee Applications (formerly on Domino)
- We installed our 2nd VMware ESX server inside our network in Mar.05 and have deployed the following servers on this host:
 4. Class web payment server
 5. Class payment processing server
 6. Technical Services helpdesk server
 7. Router traffic monitoring server

Note: of these 7 servers, four were new installations which would have required purchasing new server hardware [> \$12,000] and the other three replaced obsolete hardware [> \$9,000] totaling a cost of over \$21,000, but our VMWare installs cost under \$5,000, providing a substantial savings.

- new battery packs were installed in 52 UPS's (uninterruptible power supplies for servers & routers)
F06 Plans: 2: this preventive maintenance and upgrade work, formerly performed by 2 Electronic Repair staff will now be performed annually by MicroTech staff

C. Backup & Archive System

- Due to additional concerns about data storage capacity and the impact on performance of the Tivoli system, in Oct.05 we initiated our 2nd review in 2 years of our backup and archiving process and requirements. \$4,000 was spent on all related consulting services for reviews, planning assistance and help with upgrade installs; \$35,000 was spent on associated hardware components for Tivoli and our GWArchive systems [see Attachment 5 for spring 2005 calculations on data volume requiring backup for disaster recovery and archiving to meet 7 year legal requirements]; **Note:** system documentation is in our shared backup diary
F06 Plans: 6: we anticipate the need to spend an additional \$20,000 for further upgrades in F06, which should provide sufficient capacity to meet requirements for the next 2 years
- GWArchive: in the past year, we have performed a number of searches of email using this system that have required less than 10% of the labor as would have been necessary using systems in place prior to Jan.2004. We upgraded from version 2.5.1 to 2.5.5 in Apr./May 2005, to enable more flexible search criteria and require only index updates rather than more time intensive re-indexing (as needed by the 2.5.1 version)
F06 Plans: 7: we will purchase a \$5,000 snap server to off-load all pre-Jan.2005 data from the GWArchive server to recover live server hard drive storage capacity; this is an elegant method to store data should quick access be required for future email searches

D. Security

**Info conditional upon request
& review by Technical Services**

Info available upon request & approval by Technical Services

- move selected servers into DMZ: to increase security, our Web, EPO mail, and DNS servers will be moved from outside our Firewall to our DMZ network and will be hosted on our DMZ VMware server
- antivirus: despite our current rate of receiving approx. 50,000 virused messages through inbound Internet email per month (that we know of... that our systems kill), and other potential sources of viruses through shared media, since we moved off Command Antivirus (CAV) to Symantec in June-Aug.04, we have had the least downtime and best record keeping desktops and servers nearly virus-free, in 5 years. This antivirus licensing cost \$27,670 in F05 and is expected to cost \$30,000 in F06.
F06 Plans: 11: continue use of Symantec while monitoring other competing technologies that might be competitively priced
- antispam: although we currently intercept approximately 600,000 inbound email spam messages per month, we have had a slight increase in spam bypassing our systems, reaching end-users in late spring2005. We have been using a 2 tier system, relying on USInternet (at a cost of \$3,900, down from nearly \$9,000 in F04) and services deployed in collaboration with Berbee, on our own EPO server.
F06 Plans: 12: evaluate use of both new Symantec modules and GWGuardian for alternative spam filtering strategies to replace USInternet if they are at least as effective and competitively priced
- spyware/adware management: we deployed Spybot and Ad-Aware in summer 2004 to reduce this threat coming through user contacted Web sites and have had a dramatic reduction in spyware problems in desktop computers across the District; Technical Services has also been testing methods for unattended imaging of workstations in computer labs and libraries
F06 Plans: 13: a new Symantec AV version 10, released in spring2005, designed to identify and remove spyware will be tested for possible deployment across the District in summer2005

2. Desktop Environment:

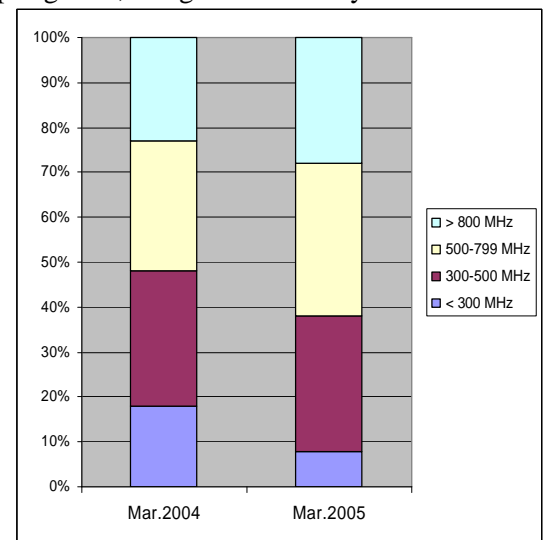
Although significant progress was made from June2004, improving the portion of our desktop inventory represented by higher speed computers (per graph to the right, 48% of our computers in Mar.04 were under 500 MHz; by Mar.05, that dropped to 38%). Regardless, nearly half our inventory still runs Win98, an operating system inherently more prone to spyware & adware attacks and increasingly under-powered for instructional requirements. Technical Services has been aggressively seeking PC donations and collaborating with other public entities to acquire used equipment but this continues to be highly inefficient, unreliable and produces modest results. (Our inventory has also slipped from 8,770 to 8,655 computers.) We must continue seeking alternative strategies to fund this critical part of our instructional environment.

Attachment 6 is a summary, by building, of MMSD's desktop (&

laptop) inventory as of Mar.2005. A summary of all acquisitions is shown in the table at the right. Meanwhile, 1,184 computers were retired from inventory. [See the table below.] This resulted in a net decrease in district inventory of 115

machines to 8,655. [The portion of MMSDs

Removed	Desktops	Laptops	Total:
all PC	927	43	970
APPLE	211	3	214
Total:	1,138	46	1,184



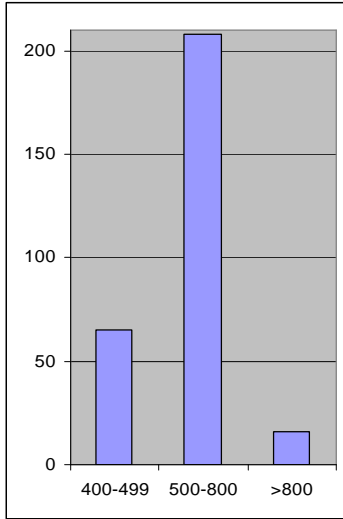
F05 Computers Deployed:	purchased		donated	Total:
	new	refurb.		
Admin	10	15	5	30
Inst	50	224	270	544
LMC	5	50	80	135
Sp Ed	150			150
parts			90	90
Total:	215	289	445	1,039

inventory represented by Apple computers dropped from 11.6% in spring 2004 to 8.8% in spring 2005.]

A. Instructional PCs: Technical Services **acquired 734 PCs in F05 through donations and purchasing refurbished PCs**

- **donations:** in F05, 445 PCs were donated, per the list shown below to the right; this more than doubled donations received in F04 (although some of these donations were unserviceable and were used to harvest parts) and we have current expectations of receiving over 150 more donated PCs by early Aug.2005
- **refurbished PC purchases:** in a special arrangement with the City of Madison, for a total of \$23,050, Technical Services purchased 289 used PCs being removed from City service in F05 (for an average cost of \$80); the numbers of PCs of

Donor source:	F04	F05
Alliant Energy	10	50
American Family	58	
City of Madison		30
Kiwanis Club of Madison	29	12
Misc. sources		10
WI Dept. of Justice	18	290
US Forest Products Lab	15	
Virchow Krause	2	
WI Dept. of R&L	56	
WI DOT	15	
WPS		63
Totals:	203	445



varying speeds is shown in the graph to the left. (Note: the majority of PCs the City of Madison removed from service in F05 have been 500 to 800 MHz.)

- Technical Services deployed all 734 donated/purchased refurbished computers to over 20 MMSD sites to address needs including:
 - help schools with highest free/reduced lunch rates improve student access to better computer technology
 - help meet curriculum needs in writing and typing labs, after school programs and new math programs
 - insure LMCs, now using the new Sagebrush software, have better machines required for circulation and search use
 - provide teachers better machines for report card data entry
 - help schools migrating from mixed platform to all PCs
- **deployment strategy:** Technical Services has continued to maintain a strategy guiding computer deployments based on 3 key criteria:
 - improve schools struggling with the oldest technology
 - serve schools trying to migrate to a single platform environment
 - meet specific technology needs connected with critical instructional priorities

In addition, Technical Services has compared Free & Reduced Lunch rates (= F&RL) of schools, as a measure of student poverty, to prioritize deployments. Attachment 7 shows graphs of % old computers (using 300 MHz as “old”) vs. F&RL, by building in spring 2004 and spring 2005 (including tables of associated data). These graphs demonstrate improvements in several schools, with most significant improvements made in Kennedy, Elvehjem, Randall, Wright, Muir and Glendale. Overall in F05, we reduced the % of MMSD computers below 300 MHz from 19.3% to 8%. 300 MHz is used as a definition of “old” in these graphs because it’s the measure used in 2003 and 2004, and it permits a comparison of progress. Attachment 8 compares buildings by F&RL vs. machines under 500 MHz, a more realistic current measure of a break point with minimally useable machines. This retargets buildings requiring the most attention in F06 to improve desktop computing resources.

F06 Plans: 14: F05 targeted sites are Mendota, Lowell, Leopold, Schenk, Sandburg, Stephens, Gompers, Huegel, Crestwood and Spring Harbor. It is important to note that as of June2005, all F06 funding currently budgeted for both administrative and instructional computers is \$30,000. [With passage of the referendum in May2005 to support facilities maintenance needs, \$500,000 was targeted to support “instructional technology”. Early in F06, Technical Services will be working with other District units to determine what portion of this allocation will be directed toward replacing old PCs.]

F06 Plans: 15: other funding sources (building, program area & grants) have funded PC acquisitions for summer 2005 deployments. These include:

Building:	# of units:	Notes:
Hamilton	14	Replacing older computers in LMC & labs
Special Ed	140	PCs ordered w/o monitors: will enable discard of older CPUs
Brearily	28	
Total:	182	

F06 Plans: 16: Other than the May05 maintenance referendum, Technical Services has \$30,000 budgeted for all instructional and administrative computers for F06. We will continue strategies to generate acquisitions from other sources, including donations.

B. Printer deployments: Technical Services deployed 81 new printers [including 3 free provided by Dell as permanent evaluation models, and 35 new upgraded Xerox printers Technical Services acquired following warranty issues with an earlier Xerox model] and 24 used printers [20 donated by Alliant Energy and 4 from other individuals]

C. Misc. F05 desktop projects:

- improved PC rebuild efficiency: each MicroTech now carries an external USB hard drive to create hard drive image backups of Food Services and other customized PCs
- GUI-It: since fall 2004, all new enterprise programs are rolled out using GUI-It: applications managed this way include: Gateway, Kronos, CLASS Client, Helpdesk Info, Accent Express-Sagebrush, Catalog-Sagebrush, Business-Portal with Adobe Reader 6 installer
- Read 180: all schools have much faster database access from local servers with replacement of 10 MB hubs with 100 MB switches and TS provided a much more efficient CD-Tower to copy Read 180 Topic CDs for all Read 180 schools
- remote desktop tools: TS conducted research on desktop management programs: SynchronEyes, Vision and Virtual Class; these tools can help teachers monitor and guide student desktop use (teachers can remotely guide students through problems), lock student keyboards and mice during lectures, enable teachers to use marker tools to highlight key areas, and broadcast screens to selected students

F06 Plans: 17: a product recommendation will be made to Computer Contacts & LMC staff in fall 2005

- ZenImaging: Technical Services staff received training in Novell Network ZENWorks, created standardized auto-imaging methods to restore and maintain XP computers to remove malware, viruses and other inappropriate configuration changes and deployed these new configurations in Labs and LMCs at West, Memorial and Doyle

F06 Plans: 18: all Win XP labs at middle and high schools and Pflaum and Hoyt will have ZenWorks auto-imaging configured in them before the end of Jan.2006

- Novell iPrint: Technical Services has been preparing for Novell iPrint; this is a printing solution that enables users to access printers from locations across the network and Internet; (from a Web browser, users with rights can install any printer on the network; iPrint automatically generates dynamic Web pages for printer installation; Administrators can create custom maps using building floor plans to help users find the closest printer; when users install printers, the correct printer driver is installed automatically. Novell iPrint has been implemented at Black Hawk, Breatly, Doyle, Memorial, Sennett, and Wright.)

F06 Plans: 19: iPrint will be deployed throughout the District by Jan.2006

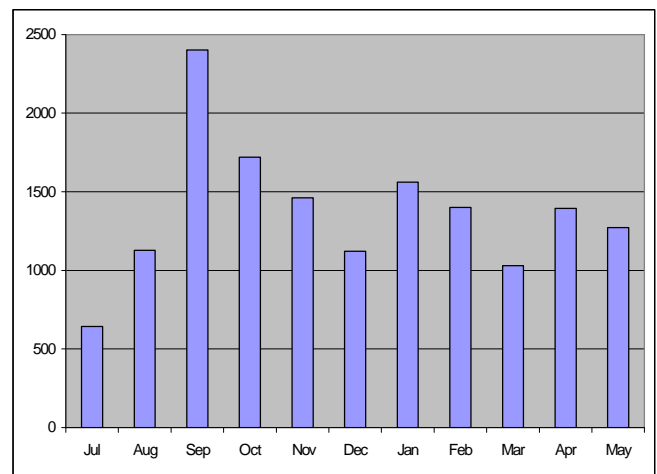
- Data Projectors: since 2001 (initially, with support from TEACH Block Grant funds), data projectors were purchased for each District building; now these are standard in labs and LMCs; trends has been to increase display quality at reduced cost; Technical Services staff select new standards each year; the spring2005 standard is the Dell 2300 lumen MP Data Projector

D. HelpDesk support: WorkOrders reflect both proactive work assignments & reactive assignments based on reported problems. The later reflect both tickets entered remotely by end-users seeking help and calls entered by HelpDesk staff and MicroTechs in the field

- 15,720 HelpDesk WorkOrders (averaging over 1,300/mo.) were recorded in F05 (compared to 14,845 WOs in F04); the distribution of these calls, by month, is shown at the right; especially large numbers of WO's in Sept. are due to reactive calls, often from staff moves between buildings &/or staff forgetting login procedures

F06 Plans: 20: Technical Services staff will work more closely with HR to anticipate staff reassignments between buildings to reduce reactionary work in Sept.

- MicroTech Supervisors & staff updated HelpDesk work order system categories redefining work order types and Level 2 and 3 criteria



- the old 300 MHz Helpdesk work order system server was taken out of service and the application and database were ported to a 2 GHz rack mounted host in our VMWare environment in June05
- in F05, Helpdesk Work Order reports were used by MicroTech Supervisors as planning tools for enterprise projects such as elementary school grade reports, Kronos, Business portal (Lawson), LMC Sagebrush and Horizon Food Services

3. Applications' Environment:

- A. Instruction: The Technical Services Division worked in collaboration with the Teaching & Learning Division as well as Special Ed and building-based grant recipients to facilitate the integration of the following programs:
- Math software review: in collaboration with Teaching & Learning staff, Technical Services set up the testing environment and paid 9 teachers for their time in June2005 to review 78 software products used for math instruction in labs at Hoyt; labor costs were \$2,145; selected products for math standards will be summarized by T&L Math Coordinators in summer2005.
 - **F06 Plans: 21:** Technical Services and T&L staff will post math software product standards on our Intranet sites in Aug.2005.
 - **F06 Plans: 22:** Technical Services will use this software evaluation process, in collaboration with other Teaching & Learning instructional areas in F06, to involve teachers in selecting and standardizing instructional software where ever possible
 - Read 180: was increased from 12 to 15 schools; every school using this program has at least 8 PCs dedicated for this instructional program
 - Sagebrush: slow system access is apparently caused by live data access from the Sagebrush servers hosted at Oregon School District via WAN
 - **F06 Plans: 23:** during summer 2005, Technical Services will be reviewing ways via desktops, traffic management or application changes to improve performance
 - BreakThrough to Literacy: at Midvale (for use by K-2) for reading improvement; is also deployed at Hoyt to train teachers
 - American Streamline Video: at O'Keeffe and Whitehorse, deployed for student use developing academic portfolios
 - Scholastic Keys: at Glendale & Hawthorne to provide simplified word processing for elementary children
 - Teacher Learning Community lab: was set up at Jefferson Middle School for use by Dane Co. area teachers on weekends for on-line curriculum development
 - English In A Flash: for ESL programs was deployed school-wide at Memorial, Cherokee, and Chavez
 - Student Information Systems: in F05 nearly all Elementary report cards were completed online; This change happened in parallel with reviews of new Student Information Systems, with goals being the acquisition and deployment of a new system in F06
 - **F06 Plans: 24:** In F06, more grades will be using online report cards by fall 2005.
 - **F06 Plans: 25:** Subject to BOE approval in summer 2005, in collaboration with Research & Evaluation, we plan to deploy a new Student Information System by spring2006.
- B. Business: Technical Services has devoted considerable effort 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.
- Horizon Food Services:
 - Horizon has provided a single, integrated food-service system that includes point-of-sale and back-office management software for all food-service operations. The OneSource POS system, which manages cost, inventory, purchases, production and menu plans, includes all features for any serving-line configuration
 - since Fall 2003, Technical Services staff helped set up and maintain the Cookie Food Service SQL database server configuration, user account access restrictions, rights on Cookie server and local Novell files servers. Technical Services staff have also configured, imaged, maintained and supported all of the 29 manager and 73 POS workstations. This support is ongoing.
 - Kronos: for time accounting of 2,450 hourly employees (includes part time staff)
 - Technical Services provided support setting up, configuring and trouble-shooting all 46 Kronos Time clocks; TS technicians also documented information (including gateway & IP configs) and tracked inventory information and clock locations
 - Technical Services tested and rolled out Kronos application objects with required Java runtime for all sites and provided printing solutions for each high school custodian supervisor to print Kronos reports

- Gateway Work Order system: Work Order system for Building Services' shops' work with a web-based interface: to replace the old AS400 client-based work order system
 - Technical Services staff tested & rolled out printing solutions & Gateway WO application objects with Java run time for all sites and helped with scheduling, setting up & preparing all training sessions
 - Single-Sign On (SSO): the objective of this project is to save staff time while maintaining system security by allowing users to enter 1 login and password and gain access to multiple (all) required applications; in F05 Technical Services invested research time on methods available and their compatibility with different operating systems and applications and drafted strategies for implementing SSO for some applications with least investment
 - F06 Plans: 26:** Technical Services will enable single-sign-on for multi-host security authentication via LDAP for Crystal Enterprise, WebSphere, the Apache Web server and Linux applications including FTP access for Web publishing
 - F06 Plans: 27:** Technical Services will develop a system, using tools we already own, to synchronize IDs & passwords between AS400s and eDirectory
 - Class: recreational management database used by MSCR to schedule & register customers:
 - Technical Services deployed client & server modules that serve MMSD employees & MSCR customers
 - the Class system was expanded in F05 to use the Facility Booking module that both tracks use of facilities for recreation & replaces the AS400 Building Permit system
 - Class eConnect system was deployed: is a portal allowing customers to view & register for activities via the Web
 - Lawson Business Portal: Web-enabled system includes access to accounting, purchasing & payroll functions; it is replacing the AS400 business & HR applications; deployed in F05 for use by clerical and administrative staff, it will become available to all employees for self-serve access to personal records
 - F06 Plans: 28:** additional services including Crystal Reports for detailed reporting, and Web Methods for online product ordering, will be deployed in F06
- 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
- F06 Plans: 29:** with the elimination of the Data Administration position at the end of F05, Technical Services staff will collaborate on District data issues as effectively as possible, directly with Bill Thompson and other programmers associated with HR, Student Services and Accounting

4. Training:

- A. Technical: see Attachment 9 for summaries of F03, F04 and F05 Technical Services Division training; these summaries are especially important in lieu of MTI concerns expressed in May2004 that there was insufficient support for technical training within our Division
- F06 Plans: 30:** To insure that Technical Services remains dedicated to MMSD's 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 10 is our F05 tracking tool])
- B. End-users:
- 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

5. Other issues/projects:

Technology Plan: **F06 Plans: 31:** document must be completed for filing with DPI by June 2006

eRate:

Yr6 (ending June04) adjusted total (based on lower than expected telecommunications costs): \$268,000 in revenue & discounts with revenue still in review with SLD and the FCC

F06 Plans: 32: maintain efforts to get FCC satisfied with their review process & bring in past due revenue

Yr7 (ending June05): totaling \$373,000 in revenue & discounts based on SLD commitment letters in fall2004

F06 Plans: 33: complete processing of reimbursement request forms in Aug.-Sept.05 to generate up to \$373,000 in revenue (depending on actual vs. budgeted telecom charges)

Yr8 (ending June06): a funding request for revenue & discounts to SLD was adjusted to \$418,000 in spring2005

F06 Plans: 34: forms indicating the initiation of Year 8 services will be filed with the SLD by Sept.2005

Yr9 (ending June07):

F06 Plans: 35: lunch data & 470s will be submitted in Nov.-Dec.05; 471s in Jan.06

Staff organization:

- an updated Organization Chart was posted on <http://dww.madison.k12.wi.us/ts/mission.htm> in June2005 [Attachment 11 is our newest OrgChart with our current list of 23 Division employees] reflecting elimination of 2 Electronic Repair staff following defeat of the Operations Referendum in May2005
- F06 Plans: 36:** although no money is line budgeted for OT in the draft F06 Technical Services budget, OT will likely exceed \$20,000 based on projected types of server and security work that must be performed and incidental OT work now captured using the Kronos time system; these costs will impact budgeted allocations for repair services and desktop computers

Budget F06:

- a copy of the F06 Technical Services budget is available in Attachment 12
- “non-standard” technology Requisitions approved by Technical Services have totaled \$318,000 in F05, down from over \$500,000 in F03 and \$337,000 in F04; 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 [see Attachment 13 for a summary of non-standard technology purchases by category, by bldg]

Library data related:

- Holdings & data statistics:
 - as of June05, there are 372,300 titles representing 1,106,800 holdings in the Sagebrush/Accent db
 - in F05, over 34,700 new holdings were added to MMSD’s library database representing 12,093 new titles
 - 10,300+ holding records were purged from MMSD’s library database
 - 24,826 existing MARC records were updated/modified partially due to post-migration data clean-up
 - Application function:
 - during F05, 29 schools transitioned to SageBrush/Accent use
 - limitations of Sagebrush/Accent Express have required central staff to perform work LMC staff previously did; [examples include global changes to student room designations &/or corrections to holding records, additions &/or changes to profiles used to search criteria/record assignments, and data entry to SageBrush’s calendar for closed library days]
 - software upgrade requests will be submitted to Sagebrush through T&L’s Library Coordinator
- F06 Plans: 37:** all remaining 17 schools will transition to use Sagebrush/Accent by Jan.2006

AS/400 Production Printing:

- by Spring2005, elementary report cards and scan sheets were no longer printed in Technical Services; additionally, HR and Accounting began printing checks by May2005; Attachment 14 reflects changes in AS400 secure printing volume performed by Technical Services staff; Technical Services had a reduction of over 110,000 sheets from our F04 production total of ~ 1 million sheets
- F06 Plans: 38:** with the possible deployment of a new SIS by spring2006, Technical Services may have an additional production printing reduction of 250,000 sheets by June2006

Disaster Recovery planning:

- F06 Plans: 39:** new Disaster Recovery manuals will be generated & distributed by Oct.2005

Key Conclusions & Recommendations:

In addition to the **F06 Plans** identified within each section of the **F05 Annual Report** above, some themes are 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 appropriate, it is short-term and is NOT the way to reliably manage these key assets for instructional success. Technical Services continues to believe that this **MUST** become an appropriate budget allocation to purchase or lease/purchase computers to insure a 4-5 year life cycle.
- B. Increase efforts to help building administrators and teachers more effectively teach children safe use of the Internet and the responsible and respectful use of technology resources
- C. 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
- D. Maintain & improve network security through both the use of technology and the education of our users
- E. 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