

**Missouri House of Representatives
Appropriations Staff
and
Missouri Senate Appropriations Staff**

**Joint Report on
MOREnet Performance
Measures**

Prepared December 1, 2006

**Missouri House of Representatives Appropriations Staff
& Missouri Senate Appropriations Staff
Joint Report on MOREnet
Prepared December 1, 2006**

Program Description

The Missouri Research and Education Network is Missouri's telecommunications-based delivery system serving higher education, elementary and secondary education, public libraries, state agencies, Missouri communities, and other organization and government agencies. The system provides Internet connectivity, access to the National Advanced Research Network (Internet2), network consulting, security and technical support, videoconferencing services and training. It represents a collaborative effort of the University of Missouri, the Department of Higher Education, the Department of Elementary and Secondary Education, the Secretary of State, and the Office of Administration.

There is no particular state statute that requires the operation of MOREnet.

5-Year Appropriation History for Program

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	<input type="checkbox"/>
GR	\$15,004,401	\$15,004,401	\$14,504,401	\$10,153,081	\$10,254,612	
FED	0	0	0	0	0	
OTH	0	0	0	0	0	
Total	\$15,004,401	\$15,004,401	\$14,504,401	\$10,153,081	\$10,254,612	

- Funding levels are appropriation amounts only and do not reflect any withholding or reserve amounts.

4-Year Expenditure History for Program

	FY 2003	FY 2004	FY 2005	FY 2006
GR	\$14,697,904	\$14,554,269	\$13,189,939	\$9,848,489
FED	0	0	0	0
OTH	0	0	0	0
Total	\$14,697,904	\$14,554,269	\$13,189,939	\$9,848,489

Questions Posed to Department

- **What are the key results expected from the use of taxpayer funds?**

MOREnet's goals are to:

1. Operate a secure, reliable, and robust shared network to maximize the value of Missouri's investment in public sector telecommunications.

2. Influence and deliver high value services that support the effective use of technology in accomplishing Missouri's research and educational goals.
3. Be an effective and efficient organization, focused on speed, agility, productivity and member service.

The results associated with these goals are:

1. Network Quality: Provision of a secure, reliable and robust shared network to MOREnet members.
2. Network Cost Efficiency: Cost effective provision of the network.
3. Sufficient Network Capacity: Growth of the network is necessary to continue to provide the capacity MOREnet members need to meet their educational and research missions.
4. Support for Member Critical Services: Provision of key technology services necessary to promote education and research in Missouri.
5. Member Satisfaction: High member satisfaction with the services MOREnet provides.

- **What key indicators do you use to ensure those results are being met?**

1. Network Quality: The key indicator of network quality focuses on reliability of service, specifically member network uptime. Member network uptime provides information on the members' access to service, how often their connection to the Internet is up and running, and is based on average member connection uptime, adjusted for an estimate of planned outages. See Attachment A.
2. Network Cost Efficiency: The key indicator of cost efficiency of the network is the average cost per Megabyte (Mb) delivered to the member based on the total cost of the network. A focus on cost savings, including aggressively seeking new bids for all telecommunications circuits, is crucial and, prior to FY06, has allowed MOREnet to meet the growth for capacity without requiring additional resources from the state or members. (MOREnet member fees have increased more than 80 percent since FY05 to offset state funding cuts.) See Attachment B.
3. Sufficient Network Capacity: There are several indicators of network capacity, or member demand for capacity. Total member capacity in Mb (see Attachment B), the growth in the number of public K-12 connections provided above a T1 (1.536 Mb) connection (see Attachment C), and higher education bandwidth is Mb by institution type (see Attachment D), and three relevant indicators.
4. Support for Member Critical Services: One indicator of the provision of critical technology services for our members is the number of MOREnet supported video sites and events. The reliability and security of the MOREnet network has enabled the growth in classes and courses supported by Internet access in Missouri, improving and increasing educational opportunities throughout the state. These courses use many types of delivery methods, such as video classes enabled by MOREnet. See Attachment E.
5. Member Satisfaction: The key indicator of member satisfaction is derived from results of an electronic satisfaction survey sent to members who contact

MOREnet technical support for assistance following the resolution of their issues. The survey asks the member to rate MOREnet performance in five areas: staff knowledge, effectiveness of solution, timeliness of resolution, staff communication skills, and courteous service. See Attachment F.

- **What have been the results of those indicators?**

See attachments A-F for data tables and graphs with three years of historical data, an estimate of the current fiscal year, and two years of projections.

- **What is the target or goal for each indicator?**

1. Network Quality: The member network uptime target for FY05 was 99.5%. This target has subsequently been increased to 99.75%.
2. Network Cost Efficiency: The network cost efficiency target is a reduction of the average network cost per member Mb of approximately 15% each year.
3. Sufficient Network Capacity: Capacity indicators are important to track but capacity is affected by demand, usage, and funding; therefore targets are not applicable.
 - Total network capacity is projected to increase by approximately 25% each year.
 - Nearly half of public K-12 connections are expected to grow above a T1 connection by the end of FY09.
 - Higher education network capacity is projected to increase by approximately 25% each year.
4. Support for Member Critical Services: The target for growth in MOREnet supported video sites is 8% each year.
5. Member Satisfaction: The technical support member satisfaction survey target for FY05 was 95.58%. This target has subsequently been increased to 98.00%.

- **If any targets were missed, why were those targets missed?**

Member network uptime was 99.63% in FY06 compared to the target of 99.75%. Variations in network uptime are related to four basic variables: member router replacements/circuits transitions due to contract changes and upgrades, power outages related to storms, outages related to member actions (such as disconnection of equipment), and vendor maintenance issues. Because there is a gap in router availability when member equipment is replaced or upgraded for growth, the statistics available overstate network downtime in periods of high transition and growth. In addition, storm activity in spring and summer of 2006 caused significant power outages impacting uptime statistics.

- **What is currently being done to improve deficiencies?**

Monitoring processes and systems have been reviewed to ensure maximum possible accuracy and timeliness based on current technology and staffing. The MOREnet council is working with MOREnet staff to address recent growth in circuit/equipment upgrades and transitions, as driven by changes in technology and member demands.

- **What other programs and agencies are partners in facilitating the desired result?**

MOREnet was established in 1991 at the University of Missouri – Columbia, and operates as a separate unit within the University of Missouri System.

The MOREnet Council (“the Council”) was formed in 2003 by a Memorandum of Understanding between the Curators of the University of Missouri, the Missouri Department of Elementary and Secondary Education, the Missouri Department of Higher Education, and the Missouri Secretary of State.

The Council consists of representatives from the Secretary of State, Department of Higher Education, Department of Elementary and Secondary Education, the University of Missouri, the Office of Administration, local schools, libraries, and higher education institutions. The collaborative effort of the Council representatives provides direction and oversight for the goals and mission of the organization, and demonstrates a commitment to working across state entities for the mutual benefit of all.

In addition to House Bill 3 funding for MOREnet, separate funding from the Secretary of State (House Bill 12) supports public library connections and shared electronic databases. Through collaboration between the MOREnet Council members and the State Library, shared electronic resources funded by House Bill 12 are made available to all members of MOREnet. These are valuable information resources many schools and libraries could not afford individually. See Attachment G.

Assessment and Evaluations of the Current Measures

MOREnet has a well developed, targeted, and consistent method of evaluating and measuring its performance. Its inclusive decision-making and policy-setting model appears to be effectively incorporating the wide variety of entities using the service. In addition, its customer service feedback survey provides timely and specific feedback on its performance.

Recommendations of Additional Measures if Needed

No recommendations for additional measures at this time.

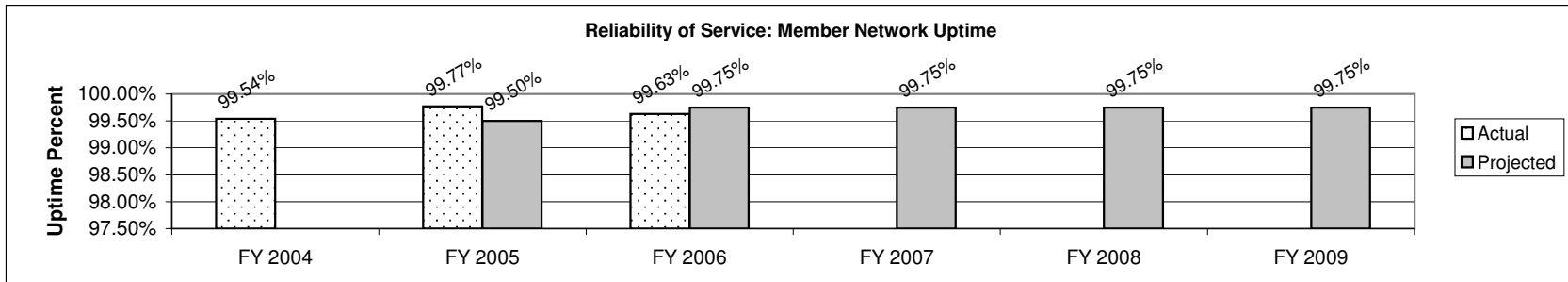
MOREnet History of Performance Indicators

Attachment A: Network Quality

Reliability of Service: Member Network Uptime

This measurement provides information on the members' access to service, how often their connection to the Internet is up and running, and is based on average member connection uptime, adjusted for an estimate of planned outages. Variations in network uptime are related to four basic variables: member router replacements/circuit transitions related to contract changes and upgrades, power outages related to storms, outages related to member actions (such as disconnection of equipment), and vendor maintenance issues. Because there is a gap in router availability when member equipment is replaced or upgraded for growth, the statistics available overstate network downtime in periods of high transition and growth. In addition, storm activity in spring and summer of 2006 caused significant power outages impacting uptime statistics.

	FY 2004 Actual	FY 2005 Proj.	FY 2005 Actual	FY 2006 Proj.	FY 2006 Actual	FY 2007 Proj.	FY 2008 Target	FY 2009 Target
Member Network Uptime	99.54%	99.50%	99.77%	99.75%	99.63%	99.75%	99.75%	99.75%



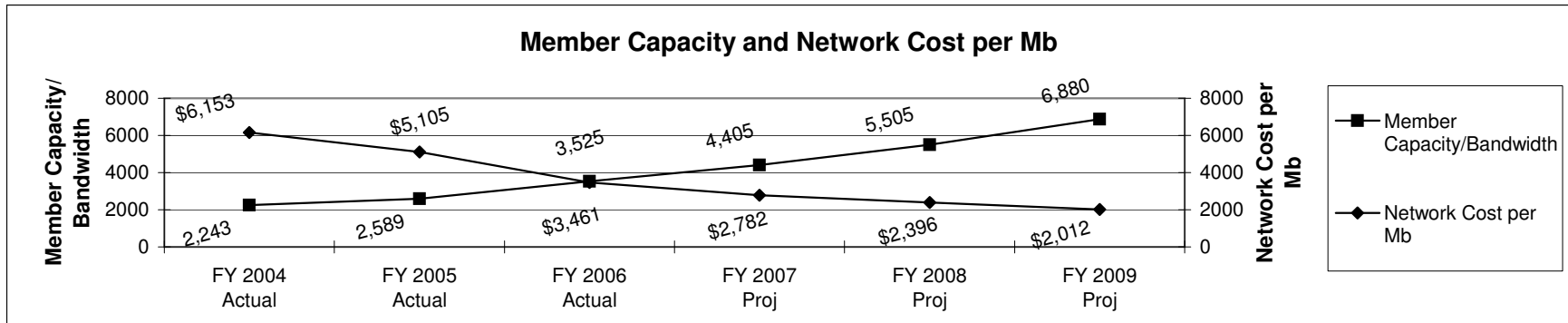
MOREnet History of Performance Indicators

Attachment B: Network Cost Efficiency and Sufficient Network Capacity (All Members)

Demand Growth and Cost Efficiency: Capacity and Cost per Mb

The demand for Internet access continues to grow at a rapid pace. Although there are fewer new sites being added to the network, additional workstations and greater use of electronic resources and communications by students, faculty, and staff continues to push bandwidth demand higher. In addition, the citizens of Missouri are increasing their interaction with state government via electronic transactions and communications that run across MOREnet's network. MOREnet continually seeks new ways to manage the growth in demand without adversely affecting education and government, including aggressively seeking new bids for all telecommunications circuits.

	FY 2004 Actual	FY 2005 Proj.	FY 2005 Actual	FY 2006 Proj.	FY 2006 Actual	FY 2007 Proj.	FY 2008 Target	FY 2009 Target
Member Capacity in Mb	2,243	2,500	2,589	2,950	3,525	4,405	5,505	6,880
Network Cost per Member Mb	\$6,153	\$5,988	\$5,105	\$4,458	\$3,461	\$2,782	\$2,396	\$2,012



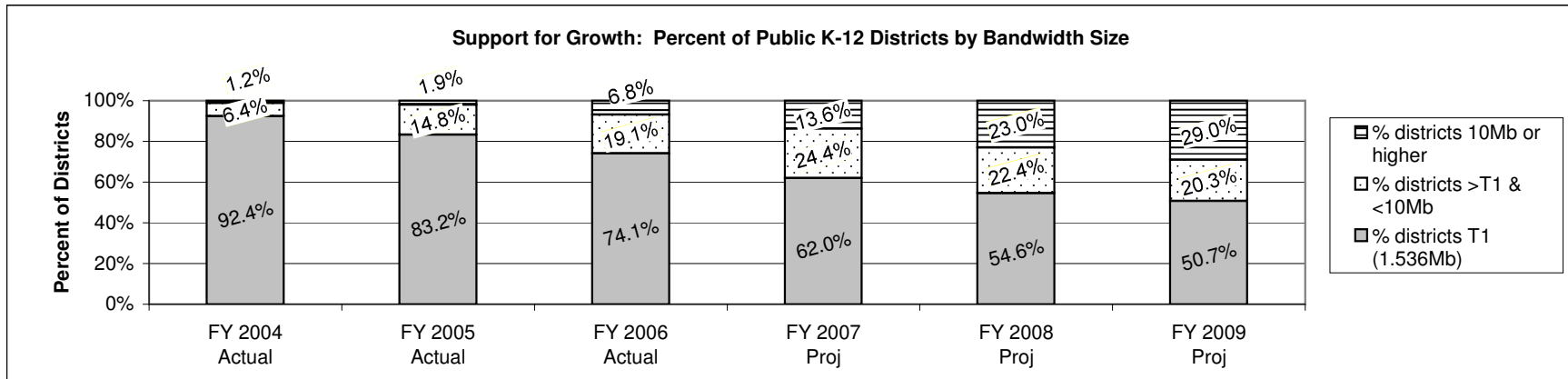
MOREnet History of Performance Indicators

Attachment C: Sufficient Network Capacity (Public K-12 Members)

Serving the Needs of Schools, Access for All and Support for Growth: Percent of Public K-12 Districts by Bandwidth Size

In the 2002 – 2006 Education Technology Goals and Objectives document, approved by the State Board of Education, DESE has stated that “all school administrators, teachers, staff, and students will have equitable access to education technologies that promote student performance and academic achievement”. This goal is supported through MOREnet by the provision of a minimum of one T1 (1.536 Mb) connection to the shared network to each district, with incremental bandwidth increases up to 45 Mbps for districts that have over 70 percent utilization, as established in Department of Elementary and Secondary Education’s education technology strategic plan. The result is that all districts and students benefit. Students in small districts, that otherwise might be unable to afford this level and quality of service, have the same robust, reliable and secure access to educational resources available on the Internet, as students in districts with more resources. And districts with growth in demand for connectivity -- as they add additional computers to their networks, access web based resources to supplement library holdings and enhanced curriculum, interact with parents and students, and conduct business with the state -- receive the bandwidth they need.

	FY 2004 Actual	FY 2005 Proj.	FY 2005 Actual	FY 2006 Proj.	FY 2006 Actual	FY 2007 Proj.	FY 2008 Target	FY 2009 Target
Percent of districts with T1	92.4%	83.2%	83.2%	75.4%	74.1%	62.0%	54.6%	50.7%
Percent of districts > T1 & < 10Mb	6.4%	14.8%	14.8%	19.3%	19.1%	24.4%	22.4%	20.3%
Percent of districts >= 10Mb	1.2%	1.9%	1.9%	5.3%	6.8%	13.6%	23.0%	29.0%



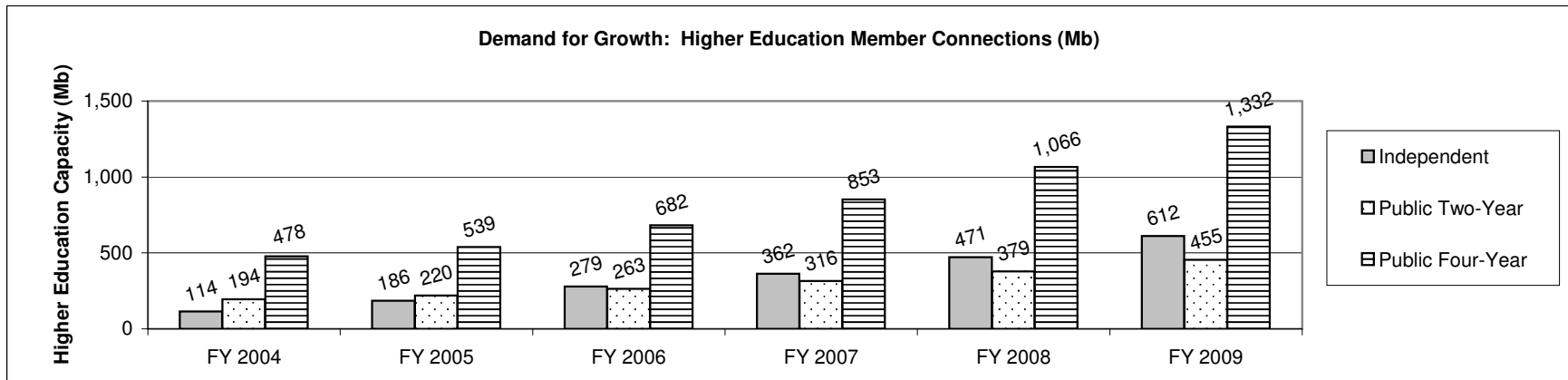
MOREnet History of Performance Indicators

Attachment D: Sufficient Network Capacity (Higher Education Members)

Demand for Growth: Higher Education

MOREnet provides Internet connections to 100 percent of public higher education institutions (13 two-years, and 13 four-years), 96 percent of four-year private not-for-profit (independent) higher education institutions (22 institutions), and an additional 19 specialized independents. The greater use of electronic resources and communications by students, faculty, and staff continues to push bandwidth demand by Missouri higher education. Growth in demand is occurring across all of the types of institutions that MOREnet serves. Overall higher education capacity demand grew by nearly 30% in between FY05 and FY06, with growth among independent institutions being the highest at nearly 50%.

	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Proj.	FY 2008 Target	FY 2009 Target
Independent	114	186	279	362	471	612
Public Two-Year	194	220	263	316	379	455
Public Four-Year	478	539	682	853	1,066	1,332
Higher Education Capacity (Mb)	786	945	1,224	1,531	1,916	2,399



MOREnet History of Performance Indicators

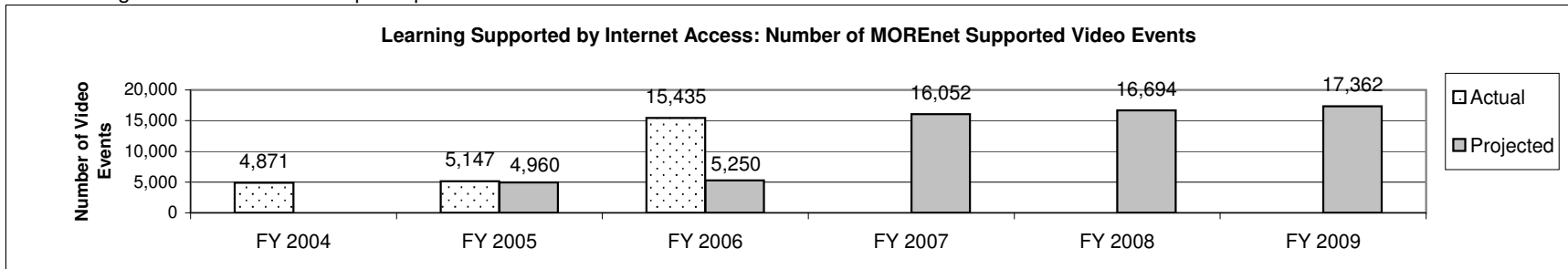
Attachment E: Support for Critical Member Services

Learning Supported by Internet Access: Number of MOREnet Supported Video Sites and Events

The reliability and security of the MOREnet network has enabled the growth in classes and courses supported by Internet access in Missouri, improving and increasing educational opportunities throughout the state. These courses include many types of delivery methods such as video classes enabled by MOREnet. Currently there is no single, consistent source of information on the number and type of courses enabled by the shared network.

	FY 2004 Actual	FY 2005 Proj.	FY 2005 Actual	FY 2006 Proj.	FY 2006 Actual	FY 2007 Proj.	FY 2008 Target	FY 2009 Target
Video Events	4,871	4,960	5,147	5,250	15,435	16,052	16,694	17,362
Video Sites*	16,923	17,300	18,908	20,000	51,334	55,441	59,876	64,666

*The average video event includes participation between several sites.



Note: The increase in video usage in FY06 was primarily due to the transition of two K-12 consortiums with their events to MOREnet's video bridging service, and the enabling of member controlled video event scheduling.

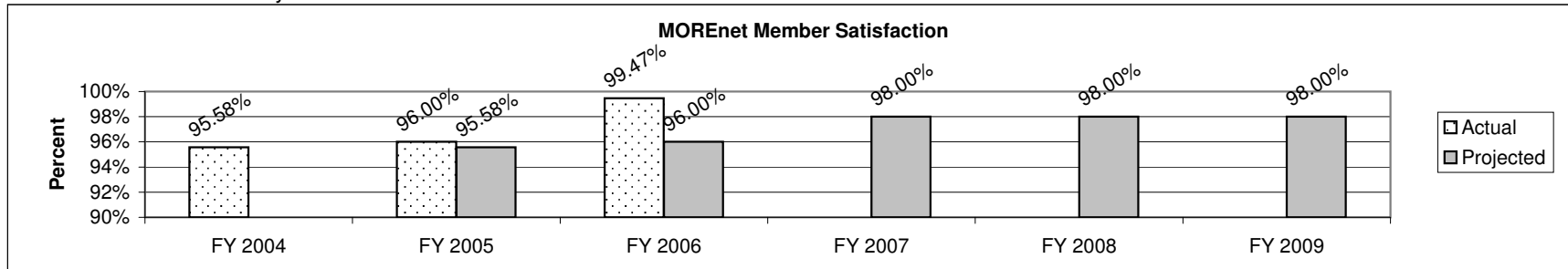
MOREnet History of Performance Indicators

Attachment F: Member Satisfaction

All members contacting MOREnet technical support for assistance receive an electronic satisfaction survey following the resolution of their issues. This survey asks the member to rate MOREnet performance in five areas: staff knowledge, effectiveness of solution, timeliness of resolution, staff communication skills, and courteous service. The data shown below is averaged across all members, types of assistance, and areas of performance.

In addition to this survey data, in FY 2005 MOREnet completed a broader member satisfaction survey in which respondents rated MOREnet 9.1 on a scale of zero to 10. While satisfaction ratings were consistently high across areas of service, type of member, and size of organization, the areas in which members displayed the highest satisfaction were Internet connection reliability, technical support, security services, and general member service.

	FY 2004 Actual	FY 2005 Proj.	FY 2005 Actual	FY 2006 Proj.	FY 2006 Actual	FY 2007 Proj.	FY 2008 Target	FY 2009 Target
Member Satisfaction Survey	95.58%	95.58%	96.00%	96.00%	99.47%	98.00%	98.00%	98.00%

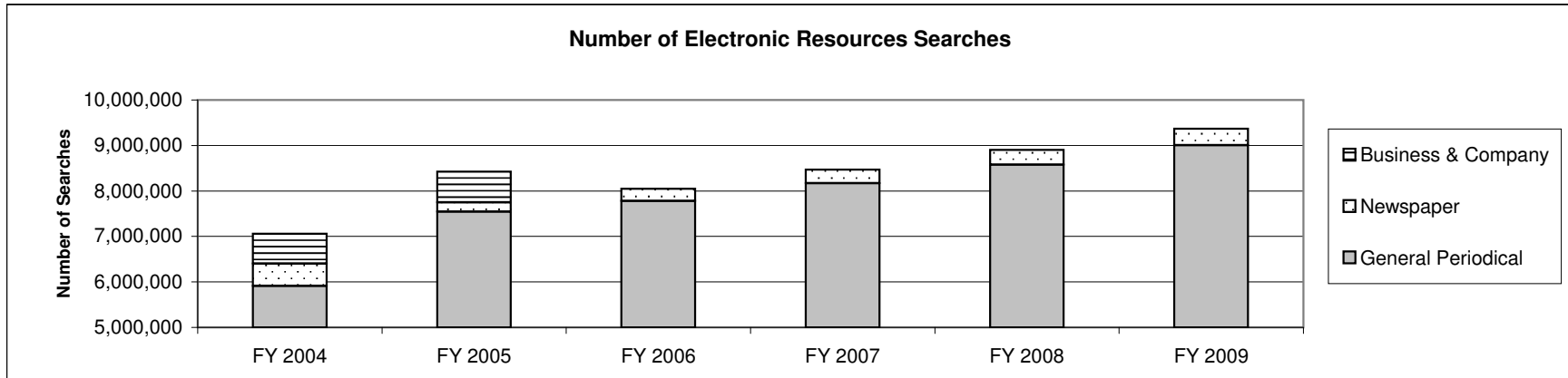


MOREnet History of Performance Indicators

Attachment G: Electronic Resource Usage

The electronic resources provided by the REAL Program (House Bill 12) provide important reference information to all MOREnet members and citizens throughout the state. Not only are these services heavily used by public libraries, and the citizens they serve, these resources are essential to public school and higher education libraries and classrooms, and the students they serve. Without these shared resources, most public libraries and schools will not be able to afford access to electronic information resources, and the few able to afford to pay for individual access would pay more in total for a lower level of service.

	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007 Proj.	FY 2008 Target	FY 2009 Target
General Periodical	5,912,266	7,542,468	7,780,461	8,169,484	8,577,958	9,006,856
Newspaper	488,879	204,306	270,634	297,697	327,467	360,214
Business & Company	656,499	676,951	0	0	0	0
	7,057,644	8,423,725	8,051,095	8,467,181	8,905,425	9,367,070



Note: In FY05 there was a loss of newspapers resources available for access due to lack of funding which resulted in lower search statistics. In FY06 business databases were included in a new general periodical contract.