



**Report  
to  
The LEGISLATIVE FINANCE COMMITTEE**



**General Services Department  
Review of IT Consolidation and ISD/CD Functions  
November 17, 2006**

**Report # 06-39**

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November 17, 2006

Arturo Jaramillo, Secretary  
General Services Department  
715 Alta Vista  
Santa Fe, New Mexico 87502

Dear Mr. Jaramillo,

On behalf of the Legislative Finance Committee (committee), I am pleased to transmit the Review of Information Technology Consolidation for which the General Services Department (department) is the lead agency.

The consolidation effort is of particular concern because it was presented as a way to realize cost savings and generate efficiencies in how the state uses information technology. However, critical staffing shortages at the department because of insufficient revenue generation, high vacancy savings factors and the requirement to do more with less could jeopardize the entire initiative. The committee was concerned about the risks posed to state government operations and the ability of the department to create efficiencies and realize savings with the monumental obstacles through which it had to maneuver. The review team evaluated six of the major consolidation initiatives, including foundational projects such as the digital microwave upgrade that provided the springboard for the formal consolidation.

The report will be presented to the committee on November 17, 2006. We very much appreciate the cooperation and assistance we received from you and your staff. Continuous discussions were held with your staff to address any concerns before the exit conference, which was conducted on November 13, 2006.

The committee expects a corrective action plan from the department within 30 days from the date of the hearing. Staff will continuously monitor your progress.

I believe that this report addresses issues the committee asked us to review and hope that New Mexico and your department will benefit from our efforts. Thank you for your cooperation and assistance.

Sincerely,

A handwritten signature in cursive script that reads "David Abbey".

David Abbey  
Director

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## EXECUTIVE SUMMARY

### Consolidation Projects Appropriations 1998 – 2006 (in thousands)

Project	Total
MAGnet/Wire NM	\$12,671.6
Digital Microwave	\$25,225.0
Enterprise Security	\$800.0
Statewide Portal	\$2,095.0
Consolidation Plan	\$1,000.0
Architecture Plan	\$300.0
e-Mail	\$1,100.0
Accounting, Payroll and HR	\$24,150.0
Imaging and Archiving	\$3,200.0
<b>Total</b>	<b>\$70,541.6</b>

Source: Laws 1998 through 2006

*Estimated first-year savings of IT consolidation were \$19.3 million.*

*GSD reported chronic, critical understaffing due to:*

- *Insufficient revenue generation*
- *Low salaries*
- *Heavy workloads*
- *High vacancy savings factors.*

The review of statewide information technology (IT) consolidation initiatives was conducted to determine if the investments made achieved any savings, were cost effective, improved agencies' efficiency or improved services provided by the General Services Department's (GSD) Information Systems Division (ISD) and Communications Division (CD). This report shows that GSD, as the IT consolidation management lead, is experiencing difficulties.

GSD's statutory purpose is to make state government more efficient and responsive through consolidating certain state government service functions and to establish a single, unified department to administer laws relating to services for governmental entities. GSD's new executive administration adopted core values of open communication, mutual respect, professionalism and accountability in support of its mission to

- Provide essential resources and innovative business solutions for state agencies,
- Conserve and manage the assets of state government through prudent stewardship, and
- Foster responsive and courteous customer service.

The Governor's Executive Order 2004-14 mandated consolidation of IT operations and governance and declared the intent to realize first-year (FY05) annual savings of \$19.3 million. The primary intent of IT consolidation was to accomplish cost savings, short-term gains and the foundation for long-term savings. A secondary intention was to create more efficiency, both intra- and inter-agency, to improve services.

The IT consolidation initiative is of particular concern because

- The Legislature appropriated significant funding for adequate planning, execution and implementation of IT consolidation projects.
- The lead agency reports critical understaffing of long duration, which jeopardizes the entire initiative.
- It promised both short- and long-term cost savings and greater efficiencies in how the state uses information technology.

To date, IT consolidation projects funded total over \$70 million. Projects reviewed comprise a total of \$41 million appropriated, of which 28 percent remains unexpended or has been reverted as of June 30, 2006.

GSD has primary execution responsibility for the IT Consolidation Plan and is the state's lead enterprise infrastructure services provider. A

*New Mexico undertook all aspects of IT consolidation, rather than using a phased approach.*

*Savings projected to secure a \$4.8 million Wire New Mexico appropriation were based on a guess.*

**IT Vacancy Rates  
as of July 1, 2006**

Agency	Vacancy Rate
GSD-ISD	36.8%
OWTD	33.3%
TRD	27.1%
HSD	23.3%
DOL	20.0%
DPS	19.4%
GSD-CD	17.2%
DOT	17.1%
ALTSD	16.7%
DOH	16.4%
NMCD	16.1%
DCA	11.1%
PED	11.1%
CYFD	8.3%
NMED	6.5%
HED	0.0%

Source: State Personnel Office  
Table of Organizational Listings  
Dated 7/1/06

*CIO turnover may be a cause for concern.*

critical consolidation success factor is that GSD must provide equal or better services than agencies are now receiving.

Many budget-conscious states like New Mexico have undertaken or are in the process of undertaking various aspects of IT consolidation. However, the majority of states undertook one or two consolidation projects. New Mexico, on the other hand, undertook every aspect of consolidation. Many states have found that projected savings do not always materialize.

**Telecommunications Consolidation.** CD spent or encumbered \$24.8 million of the \$35.7 million appropriated for MAGnet/Wire New Mexico, including digital microwave. Rates for communication services have not been developed or published in at least four years, so agencies cannot properly plan their budget requests.

In 2005 and 2006, the IT Commission recommended release of \$2 million and \$4.8 million, respectively, without an approved Telecommunications Architecture Plan even though the appropriation required one before the money could be used.

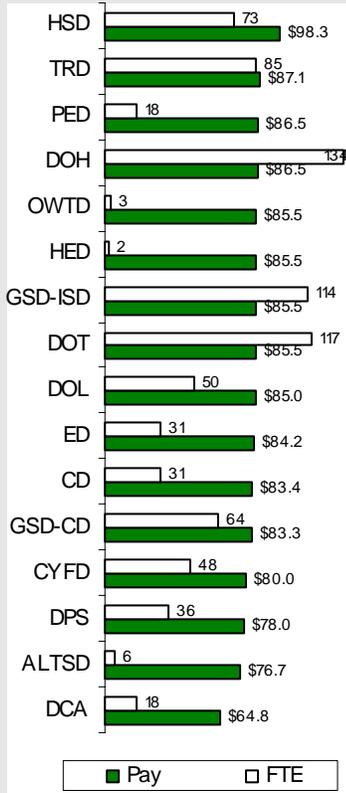
In 2006, CD procured over \$1.3 million of non-Cisco products and voice over internet protocol technology using a price agreement that expressly prohibited both.

**IT Staff Consolidation.** ISD had the highest IT vacancy rate of 15 agencies reviewed, almost 37 percent. CD's vacancy rate was 17.2 percent, and GSD's overall vacancy rate was 24.51 percent. The average IT vacancy rate for the 15 agencies was 17.5 percent, far greater than the FY06 statewide rate of 12.93 percent. GSD cannot effectively fulfill its role without adequate resources. High GSD vacancy rates may compromise the consolidation initiative and put agencies at risk. Several agencies reported staffing shortages as major IT issues.

Many agency CIOs appear well qualified to perform their jobs; however, salary levels did not appear to have any relationship to the years of IT experience, the number of IT staff supervised or total agency authorized positions. Annual CIO salaries ranged from \$64.8 thousand to \$98.3 thousand. Ten large and mid-sized agencies have had 60 percent turnover in the CIO position since 2003.

Executive Order 2004-14 mandated that CIOs (or IT leaders) of cabinet and executive agencies report directly to the agency head; that all IT staff report directly to the CIO and that the CIO have control over all IT budget expenditures. The Legislature responded by creating IT divisions in eight large agencies where none previously existed. Ten CIOs out of 15 sampled report to the agency head. Seven IT divisions appear to be

**CIO Salaries and FTE Supervised**



Source: LFC Analysis

*Some agencies' budgets were hard hit by implementing FY08 ISD rates in FY07.*

*\$117.4 thousand of badly needed funding must be reverted.*

*One agency out of eight had a workable security plan.*

*The security architecture framework is incomplete.*

consolidated. Only one statutorily created IT division does not have a formal budget.

**Data Center Consolidation.** Data centers continue to operate at a number of departments, including DOH, NMED, CYFD, TRD, DOL, DOT and HSD. No assessment of the distributed data centers has been done to determine the current capacity and growth needs of each. The Simms Computer Building Facility Planning Report, dated July 2006, evaluated GSD's enterprise data center and recommended a \$7.2 million remediation project to correct several deficiencies and to address increased capacity needs. Continued agency business operations are at risk if distributed data centers are consolidated into GSD's data center without adequate needs assessments, necessary upgrades and proper risk planning.

Final service level agreements (SLA) are not in place for over half of all e-mail, shared and co-located service clients. Many agencies benefited by early application of FY08 ISD rates. GSD estimates an overall net savings across all agencies of about \$2.4 million.

**e-Mail Consolidation.** Laws 2004, Chapter 114, Section 8, Subsection 12 appropriated \$1.1 million "for initiating a consolidation of agency e-mail servers into a single enterprise-wide e-mail system." Accurate accounting records were not kept for the project and \$117.4 thousand must be reverted. GSD also paid \$300 thousand more for e-mail equipment by entering into a long-term lease rather than buying the equipment.

During the 2006 legislative session, agencies experienced delayed or no access to the e-mail system because of the number of unknown and unplanned agency Outlook 2003 (thick client) deployments, as well as GSD's method of network address translation.

**Enterprise Security Program.** A successful security program is built on four cornerstones: organization, assessment, policies and architecture; and relies on governance and awareness. No agency reviewed has one individual solely responsible for security. Six of seven agencies conducted a risk or vulnerability assessment within the last two years, much improved since the 2003 assessment done by the OCIO. Agency policies are stricter than statewide policies. Some agencies have a draft disaster recovery plan, but most have not been tested or updated based on lessons learned. The Baseline Security Program Plan, characterized as a "cookbook of what is needed," is neither mandatory nor binding.

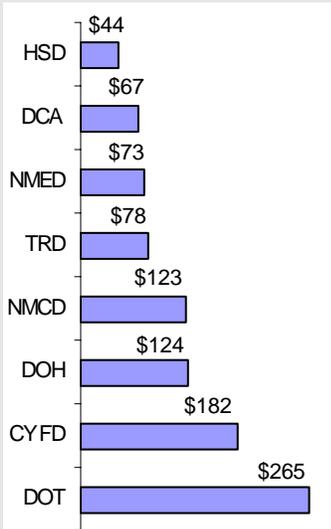
No evidence was provided to support actual FY05 IT savings.

**IT Contracts  
7/1/05 - 6/30/06**

Agency	Staff Augmentation
GSD	\$882,795
DOH	\$565,522
TRD	\$124,382
CYFD	\$80,979
DPS	\$32,269
<b>Total</b>	<b>\$1,685,946</b>

Source: Department of Finance and Administration Contracts Listings

**Post-Consolidation  
e-Mail Cost Increases  
(in thousands)**



Source: LFC Analysis

**IT Consolidation Savings.** A final IT Savings Plan has not been published. As a result, projected cost savings cannot be supported and actual cost savings cannot be calculated and demonstrated. ISD and CD operating budgets were reduced by about \$9.8 million from FY04 to FY05. Such a drastic operating budget reduction has hampered GSD’s effectiveness in planning and implementing consolidation projects. The 2003 Governor’s Performance Review stated that \$4.9 million per year could be saved if network administrators were consolidated. Out of total IT vacancy savings of \$9.5 million, only \$863.5 thousand could be attributed to network specialists. Agencies are turning to outsourcing to augment staff shortages caused by vacancies.

Eight large agencies’ e-mail costs are higher post consolidation. The projected savings of \$1.4 million based on eliminating and consolidating e-mail support staff did not materialize because no positions were eliminated. Potential savings from consolidating agency data centers cannot be quantified because agencies and GSD do not keep information about how much it costs to operate their data centers.

**Statewide Portal.** Poor planning, execution and follow through resulted in the failure of the statewide portal project.

**Accounting for Special Appropriations.** Appropriations were not properly accounted for in the telecommunications, e-mail, security and portal projects. Without accurate accounting, actual savings cannot be demonstrated, data center consolidation savings cannot be calculated, projected savings are “educated guesses” at best, special appropriations are co-mingled with operating budgets and unnecessary reversions must be made.

**Recommendations.** Before proceeding with IT consolidation

- Follow the statutory requirements, including procurement, planning, assessment, agency responsibilities, accounting and reporting.
- Assess and plan projects properly. Include resource requirements, impact of change, information gathering, equipment replacement, savings opportunities, risks and lessons learned.
- Account for special appropriations separately, completely and accurately.
- Communicate rate changes with agencies to allow for proper budget planning.
- Finalize SLAs for all information and communication services.
- Finalize all guidance documents and make agency requirements mandatory.

## BACKGROUND INFORMATION

**Background.** The statutory purpose of the General Services Department (GSD) is to make state government more efficient and responsive through consolidating certain state government service functions; and to establish a single, unified department to administer laws relating to services for governmental entities. GSD provides information systems and telecommunication services to state agencies through its Information Systems Division (ISD) and Communications Division (CD). The CD, although created by Section 15-2-1 NMSA 1978, was not actually established as a standalone division within GSD until Governor Richardson signed Executive Order 2003-14 in May 2003. GSD's information technology (IT) operations are funded by charging user agencies for the services they receive from GSD.

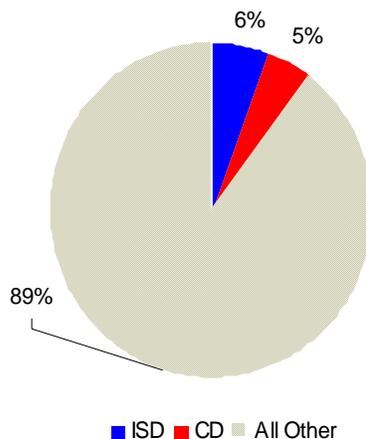
GSD's executive administration changed in early 2006. Core values of open communication, mutual respect, professionalism and accountability were adopted in support of the agency mission, which is to

- Provide essential resources and innovative business solutions for state agencies,
- Conserve and manage the assets of state government through prudent stewardship, and
- Foster responsive and courteous customer service.

ISD's strategic plan (undated) describes the mission of GSD, as well as business and technical IT objectives. It reports lessons learned from e-mail implementation and data center consolidation, as well as the need for enterprise-level asset management, security and storage. No action plan is included. Without specific action items and implementation targets, the strategic plan lacks direction. CD has not published a strategic plan. The GSD operating budget and capital requests appear reasonably aligned with the agency's strategic plan.

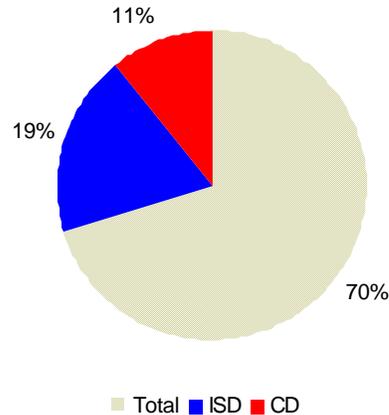
Chart 1 shows that ISD and CD operating budgets together total about 11 percent of GSD's FY07 budget of \$385.6 million or \$21.5 and \$17.9 million, respectively. Chart 2 shows that ISD and CD full-time-equivalent positions comprise about 30 percent of total GSD authorized positions.

**Chart 1. ISD and CD Budgets as a Percent of Total FY07 GSD Budget**



Source: Laws 2006.

**CHART 2. ISD and CD Staff as a Percent of Total GSD Staff**



Source: State Personnel Office Table of Organizational Listings 7/1/06

In March 2004, Governor Richardson signed Executive Order 2004-14 requiring consolidation of information technology operations and governance and declaring the intent to realize a first-year annual savings estimate of \$19.3 million. The executive order was a direct result of the Governor's Performance Review (Performance Review) undertaken shortly after he took office in January 2003. Chapter V, Creating a More E-efficient New Mexico, addresses both consolidation of IT services and investing in MAGnet (multi-agency network). The primary intent of IT consolidation was to accomplish cost savings, short-term gains and the foundation for long-term savings. A secondary intention was to create more efficiency, both intra- and inter-agency, to improve services.

IT consolidation has three high-level components:

- IT staff consolidation that would allow a single point of accountability for IT,
- Common business function sharing and leveraging, such as the Statewide Human Resources and Management Reporting (SHARE) system, and
- Technical services consolidation such as networks/telecommunications, e-mail, security (including identity management), and data centers.

The IT consolidation initiative is of particular concern because

- It promised both short- and long-term cost savings and greater efficiencies in how the state uses information technology.
- The lead agency reports critical understaffing of long duration, which jeopardizes the entire initiative.
- The Legislature appropriated significant funding for adequate planning, execution and implementation of IT consolidation projects.

GSD has primary execution responsibility for the IT Consolidation Plan. It is the IT consolidation management lead, as well as the state's lead enterprise infrastructure services provider (Executive Order 2004-14). New agency management recognizes that adequate staffing levels are necessary to accomplish short- and long-term program goals. According to GSD's FY07-FY08 strategic plan, only 399 out of 523 authorized FTE were filled on July 1, 2006. This critical understaffing has become chronic over the last several years and is caused by

- Insufficient revenue generation in enterprise divisions and/or rigid budget limitations,
- Low incumbent salaries that adversely impact recruitment and retention,
- Heavy workloads, and
- High vacancy savings factors.

One critical consolidation success factor is that GSD must provide equal or better services than agencies are now receiving. GSD cannot effectively fulfill its role without adequate fiscal and human resources.

Direct appropriations for New Mexico's consolidation efforts total over \$92 million. The table below includes appropriations for projects reviewed in this report, as well as appropriations related to the SHARE system and imaging and archiving. Table 1 does not include funding appropriated for Health Insurance Portability and Accountability Act compliance (\$13.6 million); to develop the Statewide Immunization Information System (\$500 thousand); and to develop a social services architecture plan and convert current human services systems into the layered structure specified (\$7.7 million).

**Table 1. Schedule of Consolidation Appropriations by Project – Laws 1998 - 2006**

(in thousands)

Project	1998	2001	2002	2003	2004	2005	2006	Total
MAGnet/Wire NM <sup>(1)</sup>		\$3,671.6	\$1,000.0	\$1,200.0	\$2,000.0		\$4,800.0	\$12,671.6
Digital Microwave <sup>(2)</sup>	\$3,225.0		\$10,000.0	\$2,000.0	\$5,000.0	\$5,000.0		\$25,225.0
Enterprise Security				\$100.0	\$700.0			\$800.0
Statewide Portal <sup>(3)</sup>		\$700.0	\$1,000.0	\$245.0	\$150.0			\$2,095.0
Consolidation Plan					\$1,000.0			\$1,000.0
Architecture Plan					\$300.0			\$300.0
e-Mail					\$1,100.0			\$1,100.0
Accounting/payroll/HR <sup>(4)</sup>			\$650.0		\$20,000.0	\$3,500.0		\$24,150.0
Imaging and Archiving					\$1,200.0	\$1,200.0		\$2,000.0
<b>Total</b>	<b>\$3,225.0</b>	<b>\$4,371.6</b>	<b>\$12,650.0</b>	<b>\$3,545.0</b>	<b>\$32,250.0</b>	<b>\$9,700.0</b>	<b>\$4,800.0</b>	<b>\$70,541.6</b>

Source: Laws 1998 through 2006

(1) Laws 2001 appropriated \$3,671.6 thousand, which included \$2,171.6 from the Road Fund. DOT did not transfer the Road Fund portion.

(2) Laws 1998 appropriations were made in compliance with federal requirements to provide digital services to support law enforcement activities. A bond issuance authorized by Laws 2000, Chapter 21, Section 10, Subsection C failed. No appropriation was made.

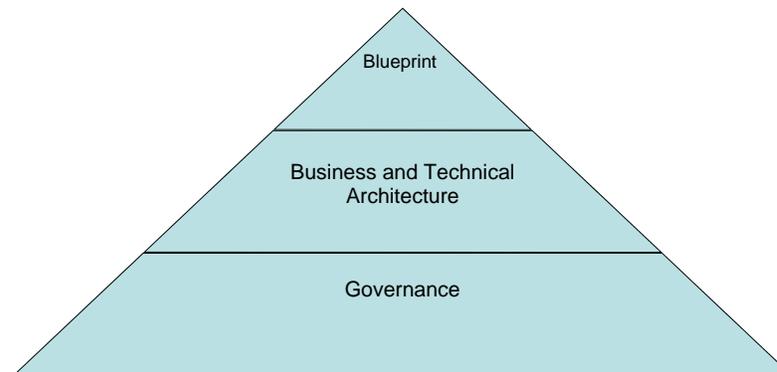
(3) The 2003 amount includes \$50.0 from the ONGARD appropriation, \$70.0 from the PRC Insurance Division appropriation and \$25.0 from NMED.

(4) Amounts shown do not include agency in-kind contributions.

According to a National Governors' Association issue brief on improving service delivery and government efficiency, an IT governance model that is focused on results should be implemented. There are two models: single agency or oversight board, ideally created by legislation. The model should provide leadership, organization, direction, credibility and accountability. The structure should be designed to establish accountability at all levels. A decision-making body and process for IT investment should be established. Finally, a trusted advisor should be empowered to bridge policy and technology. Reforms can be held back if not led by an empowered, experienced advisor or decision maker who understands how technology can enable government process and the policies behind them.

New Mexico's structure is created through legislation with the Governor appointing the majority of the members of the Information Technology (IT) Commission. Policies and standards are created by the Office of the Chief Information Officer (OCIO), approved by the IT Commission and carried out by individual agencies. Enterprise-like services are provided by GSD, but it has no authority over policies and standards. Despite the fact that the adopted structure in the Framework for Enterprise Architecture has governance at its base, related legislation top-down governance.

**Figure 1. Enterprise Governance Structure**



Source: Framework for Enterprise Architecture Program

State governments spend billions of dollars annually on IT. Individual agencies frequently purchase and operate independent systems to do similar work throughout state government, which is inefficient and adds to costs. Many budget-conscious states like New Mexico have undertaken or are in the process of undertaking various aspects of IT consolidation. Pennsylvania's project to unify e-mail servers saved the state more than \$18 million in software over the initial three years. However, projected savings do not always materialize. In 2003, North Dakota passed IT legislation consolidating e-mail, file/print servers, database administration, data storage, application servers and hosting services. Although the North Dakota believes efficiency is improved, an expected \$1.4 million in savings was not realized.

**The majority of the states in the National Governor's Association issue brief undertook one or two projects. New Mexico, on the other hand, undertook every aspect of consolidation.** Appendix A shows a breakdown of various states' consolidation efforts.

**Objectives.** The objectives of the performance review will be to answer the following questions related to statewide IT consolidation initiatives that have considerable overall funding, greatest overarching impact and provide insight into the ISD and CD functions.

1. Do ISD and CD have clear sensible strategic plans with regularly updated action plans?
2. Are the operating budgets and capital requests reasonably aligned with the strategic plan?
3. What services does ISD provide and to which agencies?
4. What telecommunication services does CD provide and to which agencies?
5. Did consolidation activities save the state money?

6. Did consolidation create IT efficiencies that resulted in more efficient government?
7. Were there any increased costs to agencies directly related to consolidation for which agencies did not have funding?
8. How many separate networks continue to be operated by state agencies?
9. Has physical and logical security been implemented? Is it federally compliant?
10. How many data centers have been moved to GSD/ISD?

**Scope and Methodology.**

- Review of laws, rules and regulations,
- Review of Legislative Finance Committee (LFC) files,
- Review statewide policies and procedures regarding IT consolidation,
- Review individual agency and overall savings,
- Interview GSD and agencies' staff, and
- Analyze staff, data center, e-mail, security and telecommunications consolidation.

**Authority for Review.** The LFC has the statutory authority under Section 2-5-3 NMSA 1978 to examine laws governing the finances and operations of departments, agencies and institutions of New Mexico and all of its political subdivisions, the effects of laws on the proper functioning of these governmental units and the policies and costs. The LFC is also authorized to make recommendations for change to the Legislature. In furtherance of its statutory responsibility, the LFC may conduct inquiries into specific transactions affecting the operating policies and cost of governmental units and their compliance with state law.

**Review Team.**

Aurora B. Sánchez, CISA, Senior IT Performance Auditor  
Susan Fleischmann, CPA, Performance Auditor

**Exit Conference.** The contents of this report were discussed with General Services Department Secretary, Arturo Jaramillo; Deputy Secretary, Thomas Romero; Chief Financial Officer, Chris Hoffmann; Strategic Planning Officer, Pat McHenry; Chief Information Officer, Karen Baltzley; Deputy Chief Information Officer, John Fitter; Communications Director, John Martinez; State Chief Information Officer, Roy Soto; OCIO Chief of Staff, Neil Meoni; and OCIO Consultant, Clancy Roberts, on November 13, 2006.

**Report Distribution.** This report is intended for the information of the Office of the Governor, the General Services Department, the Office of the Chief Information Officer, the Office of the State Auditor, and the Legislative Finance Committee. This restriction is not intended to limit distribution of this report, which is a matter of public record.



Manu Patel, CPA  
Deputy Director for Performance Audits

## FINDINGS AND RECOMMENDATIONS

### TELECOMMUNICATION CONSOLIDATION

MAGnet or multi-agency network was first proposed in 2002 by the IT Management Office (now the OCIO) based on an analysis of the number of data and voice lines used by state agencies. The survey found that there were 793 data lines that cost the state approximately \$8.2 million annually and 1,045 voice lines that added another \$23 million annually.

The purpose of the project was to aggregate or combine data circuits used by state agencies and the General Services Department (GSD), to increase bandwidth (data or information transmission rates), to reduce the funding required to pay for circuits and to create a statewide infrastructure. Centralized circuit aggregation will allow one agency to be responsible for ordering, moving, upgrading, disconnecting and monitoring all circuits, thus providing economies of scale. The initial MAGnet project appropriation was made in 2001 and the last in 2006. However, in 2005 the project was re-characterized, renamed Wire New Mexico and expanded.

The August 2003 Governor's Performance Review identified MAGnet as part of a statewide effort to cut costs by centrally leasing data circuits. According to the report, 62 agencies have duplicated GSD's network services at a cost of \$5 million per year. This effort could reap "big telecommunications cost savings" over the next four years. Even though average realized agency savings for 2003 were reported to be 33 percent and price reductions were 28 percent, MAGnet was characterized as an interim solution and digital microwave as the permanent solution. MAGnet phase 1 aggregated circuits in Carlsbad. Phases 2 and 3, aggregate the remainder of the state, were never completed. In 2005, when the project name was changed to Wire New Mexico, new phases were established. GSD reported to the 2006 House Appropriation and Finance Committee that \$227 thousand per year could be saved in the southeastern part of the state.

According to GSD, the primary purpose of the microwave network is to enable mobile radio communications for public safety. The network connects dispatch centers throughout the state with digital radio towers that communicate with public safety units including state police, motor transportation, Department of Transportation, state forestry, game and fish and corrections. The capacity of the digital microwave network is sufficient to address public safety needs and to allow for data transmission to rural parts of the state under Wire New Mexico. Replacing analog equipment on the microwave towers with digital equipment enables the network to carry radio, voice and data. Excess bandwidth could be sold to interested state agencies or to the private sector if no local telecommunication provider was positioned to provide service.

Table 1 in Appendix B shows new phases established for Wire New Mexico beginning with phase 2. Four of the initiatives in process and identified as part of phase 3 in the architecture plan are actually part of phase 2 in the 2006 appropriation: extend the state core fiber infrastructure through the lease of dark (dormant) fiber and purchase of equipment and fiber extensions. The map at Appendix B provides a description and pictorial representation of the phases.

While MAGnet focuses on aggregating circuits at the agency level and negotiating contracts for services, Wire New Mexico focuses on building the infrastructure through the use of digital microwave and long-term dark fiber leases which in effect creates a state-owned telecommunications company.

MAGnet/Wire New Mexico, including the digital microwave projects, has been funded for eight years. The appropriations total \$35.7 million of which Communications Division (CD) has spent and encumbered \$24.8 million. Refer to Tables 2 and 3 at Appendix B for appropriations detail.

The table below shows the status of the digital microwave build out in various state regions as of August 2006. All of the regions require additional work. Each build out requires several steps before a tower can be constructed. First, environmental, archeological and geotechnical studies must be performed; then, Federal Communications Commission licensing must be obtained.

**Table 2. Status of Digital Microwave Project**

Regions	Status
Northwest	Towers almost complete. Need MPLS/IP hardware and fiber to Albuquerque
South Central	Presently built out as very low bandwidth ATM. Needs aggregation design
Southwest	Presently built out as ATM. Needs to be converted to MPLS/IP
North Central and Northeast	Presently built out as ATM. Needs to be converted to MPLS/IP
I-40 East	Towers under construction
Southeast	Built out as (Multi-protocol Label Switching/Internet Protocol) MPLS/IP ready for agency aggregation

Source: Wire New Mexico Presentation August 2006

**Creating A State-Owned Telecommunications Company May Violate Telecommunication Bureau’s Statutory Responsibilities.** Section 15-5-1(B) NMSA 1978 states that the CD’s Telecommunications Bureau shall enter into agreements to provide where feasible, a central telephone system, including wide-area telephone service (WATS). The Code of Federal Regulations (47CFR36.641) defines WATS as “a toll service offering for customer dial-type telecommunications between a given customer station and stations within specific geographic rate areas using a single access line between the customer and the serving agency.”

CD interpreted its responsibility to provide a WATS line as allowing it to create a state-owned network or telecommunications company. CD believes that WATS now encompasses services offered under Wire New Mexico because technology has changed since the law was written. However, the definition of a WATS line has not changed to include video and data, so the CD cannot use this statute to proceed with its implementation of Wire New Mexico.

At the September 27, 2006, meeting of the legislative Economic and Rural Development and Telecommunications Committee, the executive director of the New Mexico Exchange Carrier Group (Group) expressed concerns about: (1) the state’s impression that rural telephone services are inadequate; and (2) the impact of Wire New Mexico on its niche market. The Group asked if it has been the Legislature’s intent to establish the state as a telecommunications provider or if the intent was to provide services to areas without broadband access.

According to the executive director, schools and state offices are the rural telecommunications provider anchor tenant. If they cannot provide services to the schools and state offices, there is a possibility that these telecommunication companies will have to make up lost revenue by increasing rates to its rural customers.

**A Communications Rate Structure Needs To Be Established.** The CD has not developed or published rates in at least four years. Although CD is working on the rates and hopes to publish them soon, agencies did not have them available to properly plan their FY08 budget request.

Wire New Mexico will allow CD to provide services very differently than it has in the past so a rate structure is crucial. The Telecommunications Architecture Plan states that agencies will not be burdened with the entire cost of Wire New Mexico, and that costs will be amortized and distributed across the enterprise.

Also, GSD has not fully defined Wire New Mexico. Some documents characterize it as only the fiber component funded through special appropriations since 2003; other documents indicate it includes the digital microwave capital project. Amortization and distribution of costs across the enterprise will be different if it is restricted to the special appropriations versus including both. Agencies cannot properly plan annual budgets if they do not have current rates.

Section 15-5-3, NMSA 1978 requires the Telecommunications Bureau to charge participating agencies, departments and institutions a pro rata and equitable share of the total monthly costs of the central telephone system. Toll calls not covered by WATS and supplemental equipment shall be paid for by agencies, departments and institutions making the calls or using the equipment. The statute does not cover the video and data service offerings proposed under Wire New Mexico.

**The IT Commission Recommended Release Of \$6.8 Million Without An Approved Architecture Plan.** In April 2005, the OCIO recommended release of \$2 million for MAGnet contingent on submission of a **final** Telecommunications Architecture Plan within 90 days. Also in April 2005, the IT Commission Project Certification Committee recommended the release of the \$2 million with the same contingency but reduced the time to 30 days of IT Commission certification. CD responded to the mandate for a Telecommunications Architecture Plan by saying that the OCIO allowed GSD to condense the Telecommunications Architecture Plan into a Project Charter form with the understanding between OCIO and GSD that a more encompassing Telecommunications Architecture Plan would be developed. In June 2005, the IT Commission certified release of funds based on CD's answers to questions from the Department of Finance and Administration and LFC staff, but not because a **final** Telecommunications Architecture Plan was submitted and approved.

In August 2006, CD requested another \$4.8 million. The OCIO recommended approval of the project and the IT Commission certified release of funding even though the Telecommunications Architecture Plan called for in the appropriation had not been approved.

Section 15-1C-1 NMSA 1978 requires the OCIO to:

- Perform reviews of executive agency information technology projects or information technology management processes, and
- Provide oversight of information technology projects, including ensuring adequate risk management and disaster recovery practices and monitoring compliance with strategies developed by the commission for information technology projects that impact multiple agencies.

Oversight of Information Technology, 1.12.5 NMAC, defines oversight as a continuous process of project review and evaluation to ensure that project objectives are achieved in accordance with an approved project plan and project schedule and that IT projects are in scope, on time and within budget. The OCIO is required to accomplish the following activities, among others.

- Provide oversight of all IT projects.
- Monitor agency compliance and report to the Governor, IT Commission and agency management on noncompliance.
- Monitor the progress of agency IT projects, including ensuring existence of adequate project management, risk management and disaster recovery practices.

Project Certification of Technology Projects, 1.12.9 NMAC, states that project certification shall be required before funds can be released for any of the certification phases. Regarding phased release of funds, project managers shall present the distinct components of a phased approach, with approval of what constitutes appropriate phases for a particular project to then be approved or modified by the OCIO and the IT Commission Project Certification Committee. The rule also requires the IT Commission Project Certification Committee verify that the project has been reviewed by the IT Commission Architecture Committee and the OCIO as appropriate.

**The Rio Grande Corridor Fiber Procurement Violated The Procurement Code.** CD procured over \$1.3 million of non-Cisco products and voice over internet protocol technology using price agreement 21-0133 that expressly prohibits voice telephony and allows only Cisco products.

Price Agreement 21-0133 is part of the Western States Contracting Alliance competitive procurement. State Purchasing Division can leverage these competitive prices for New Mexico, but cannot make any changes without going through the agreement administrator in Utah.

In March and April 2006, CD procured equipment and services for voice, data and video purposes under price agreement 21-0133 even though the price agreement prohibited the procurement. CD used e-mail correspondence between the INX, Inc. and State Purchasing Division that identified wireless fiber and fiber devices as associated with Cisco networking equipment as support for its actions even though it knew that neither of the two products the vendor was proposing were Cisco products. In October 2006 State Purchasing Division notified CD and the vendor of the violation. The vendor was put on notice that failure to comply with the Procurement Code could result in cancellation of its contract to do business with the state.

**Better Accounting Of Special Appropriations Is Needed.** Capital appropriations for the digital microwave have a separate cost center to account for the appropriations and expenditures. The special appropriations for MAGnet/Wire New Mexico have been commingled with the CD operating budget.

Audits of Governmental Entities, 2.2.2 NMAC, requires that specific appropriations be accounted for separately.

**Independent Validation And Verification Responsibilities For Wire New Mexico Need To Be Improved.** The independent validation and verification (IV&V) role is one of independent oversight, similar to an internal auditor. The IV&V responsibilities proposed in the Telecommunications Architecture Plan are limited to presenting project oversight planning meetings and proposing the project work plan and schedule. An IV&V, working in a project manager capacity, is subject to the oversight of the project owner, the CD, and is therefore not independent.

IV&V is the process to determine whether or not the products of a given construction phase fulfill the requirements established during the previous phase (verifying) and to evaluate the project at the end of the construction process to ensure it is free from failures and complies with its requirements (validation).

Well-structured IV&V can assist the project team achieve success if the requirements of IV&V are technical, candid and independent.

**Recommendations.**

- Clarify the statute to allow for technological changes.
- Complete the rate study, publish the rates and notify agencies of budget impact if rates increase so that each has sufficient time to request a supplemental appropriation to cover the increased costs.
- Gather all GSD-associated telecommunication cost information, request help from the OCIO to obtain information from other agencies and develop a baseline cost for services. Use the results of the rate study to project initial savings.
- Follow the Procurement Code and negotiated price agreement requirements.
- Follow the statutory requirements before certifying release of any special appropriation.
- Set up separate cost centers to account for each project that received a special appropriation.
- Require IV&V to report on the quality of the product delivered, timeliness of the contractors, team burnout factor, availability of project resources, revenue and expenditures, unresolved issues, delays, sponsor commitment and what risks, if any, are associated with each item.
- Develop and formally adopt service level agreements for all telecommunications services provided.

## IT STAFF CONSOLIDATION

**High Department Vacancy Rates May Compromise The Consolidation Initiative And Put Agencies At Risk.** Vacancy rates for 15 agencies ranged from a low of zero at the Higher Education Department (HED) to a high of almost 37 percent in GSD's Information Systems Division (ISD). The average IT vacancy rate for all 15 agencies was 17.5 percent, which is greater than the statewide vacancy rate of 12.93 percent reported by the State Personnel Office for FY06.

The overall vacancy rate for GSD was 24.51 percent, and the Communications Division (CD) vacancy rate was 17.2 percent. As the state's IT consolidation management lead agency, GSD cannot be successful with vacancy rates of this magnitude. Moreover, an agency cannot meet its obligations to its internal users or its partners if its information technology staff is sustaining such high vacancy rates. Freezing all currently vacant IT positions, as directed by Executive Order 2004-14, may have appeared to be a reasonable method for achieving savings. However, freezing positions that support critical business functions simply places the agency and the state at risk.

**Table 3. IT Vacancy Rates as of July 1, 2006**

Agency	IT Authorized Positions Supervised	IT Vacancies	Vacancy Rate
GSD-ISD	114	42	36.8%
OWTD	3	1	33.3%
TRD	85	23	27.1%
HSD	73	17	23.3%
DOL	50	10	20.0%
DPS	36	7	19.4%
GSD-CD	64	11	17.2%
DOT	117	20	17.1%
ALTSD	6	1	16.7%
DOH	134	22	16.4%
NMCD	31	5	16.1%
DCA	18	2	11.1%
PED	18	2	11.1%
CYFD	48	4	8.3%
NMED	31	2	6.5%
HED	2	0	0.0%

Source: State Personnel Office Table of Organizational Listings Dated 7/1/06

A detailed analysis of nine large agencies' IT vacancies since 7/1/06 shows that 25.5 percent of 161 vacant positions cannot be filled - 23 due to budgetary constraints and 18 due to being frozen (see Table 1 at Appendix C). Of the agencies reviewed, the Taxation and Revenue Department (TRD) appears to be the most affected. Seventy-eight percent of that agency's vacant positions are either frozen or vacant for budget reasons. In its FY08 IT plan, TRD reported that IT is integral to its ability to accomplish its core mission and that its IT shop is under-funded and under-staffed to meet TRD needs.

GSD's major IT issues/concerns, as reported in its FY08 IT plan, included a high vacancy rate (60 percent of ISD's vacancies occurred beginning in May 2005) and an increased demand for quality support of services and maintaining system and network availability levels. For example, Microsoft recommended at least five FTE to support consolidated e-mail. The July 1, 2006, Table of Organizational Listings (TOOL) shows that GSD has four authorized positions with one vacancy. Staff available to support consolidated e-mail is two below the minimum recommended, which affects the service level provided. An enterprise service provider cannot function successfully without adequate resources.

Also, GSD stated a need for continued funding to support the expansion of the enterprise IT infrastructure and system and technical capacity to absorb agency IT activities in a timely manner. An expansion request was submitted to increase current CD staffing levels by seven FTE in FY08 to maintain the expanded Wire New Mexico network. As of July 1, 2006, CD had a 17.2 percent vacancy rate. Since that time, four positions were filled, two are being reclassified, one is a temporary position, one position could not be located and three are still vacant.

The Department of Health (DOH) reported in its FY08 IT plan that a major concern is lack of GSD resources to implement shared services. In addition, DOH reported a lack of available infrastructure resources for upgrading data circuits at several DOH sites. As of July 1, 2006, GSD had 10 network specialist vacancies out of a total of 19 for all agencies surveyed, or 52.6 percent.

The Department of Transportation (DOT) reported that manpower shortages are relatively unchanged from last year and that the agency is still relying on contract staff augmentation to meet normal business requirements. DOT also reported that part of the headcount reduction in IT over the past few years adversely affected contract administration. A review of all IT-related contracts is currently underway and procedures are being put back in place to have central review and approval of all IT purchases and contracts. Finally, DOT reported that in both FY06 and FY07, rather than flat budgets, cuts of \$800 thousand and \$1.1 million, respectively were made. According to LFC staff, DOT chose to make the budget reductions in IT, which has caused some problems meeting ongoing projects needs and actual operating bills. IT will experience shortfalls in FY07 in some areas and will seek funding help from other sources.

The Human Services Department (HSD) reported that lack of adequate resources for staffing is a major IT issue and that staff augmentation is used to supply needed resources.

In a 2004 follow-up review of the Department of Public Safety (DPS) IT program, New Mexico Institute of Mining and Technology reported that the program was still severely understaffed for the period under review. DPS reported in its FY08 IT plan that flat staffing levels imposed by the state continue to create hardship within the IT division because a flat budget does not take into consideration inflation, rising costs of employee benefits or cost-of-living salary adjustments. DPS' inability to expand IT personnel in proportion to user community growth continues to strain the agency's resources. DPS further stated that opportunities for staff professional development remain deficient because funding continues to be reduced in this line item year after year. Adequate training opportunities are essential for retaining quality IT employees.

The Department of Labor (DOL), New Mexico Corrections Department (NMCD) and Children, Youth and Families Department (CYFD) reported no IT concerns or issues related to staffing.

**CIO Job Qualifications Appear Uneven.** Although the results of the review were mixed in terms of education and technical, strategic and management experience, many agency CIOs appear well qualified to perform their jobs.

According to the OCIO's draft white paper (Information Technology Management Recommendations dated November 2003), proper management requires IT leaders who

- Are experienced in managing multi-million dollar budgets,
- Are capable of understanding a range of rapidly evolving technology, and
- Are able to relate to a large number of individuals outside of the department.

The OCIO's draft white paper further states that the major factors in attracting quality candidates are pay flexibility, title and authority. The CIO's policy-making responsibilities, relationships (with other agencies, vendors and communities) and legal and managerial duties are described as complex. Using exempt status to attract IT leadership was recommended. However, the State Personnel Board Classification and Pay Listing has a category called Executive – IT with a salary range of from \$74,214 to \$131,934 annually. It appears that this classification easily accommodates current CIO salaries. A classified CIO may provide more institutional stability and permanence for IT organizations.

Resumes were requested from all CIOs to determine if agency CIOs met the requirements recommended in the OCIO's draft white paper. Those in exempt positions responded directly to the request. The State Personnel Office responded for the CIOs in the classified service.

Years of related IT experience ranged from one to about 32 years. Educational background ranged from no degree through multiple degrees. Only four individuals had IT-specific degrees. CIO experience also varied in terms of managing multi-million dollar budgets, complex policy-making tasks and legal and managerial requirements. It was not possible to assess each CIO's ability to understand rapidly evolving technology and to relate to a large number of individuals outside of the department. See Table 2 Appendix C for CIO education and experience.

Annual CIO salaries ranged from about \$64.8 thousand to \$98.3 thousand, with the average CIO salary being about \$83.5 thousand. The average years of IT experience is about 15. Salary level did not appear to have any relationship to the years of IT experience, the number of IT staff supervised or total agency authorized positions. For example, DOH is the largest agency in terms of authorized positions and has the second largest IT staff. The CIO's experience is slightly greater than average. Yet, the DOH CIO's salary is 12 percent less than the highest-paid CIO. Conversely, the smallest agency, HED, has 34.5 total authorized FTE. The CIO has less experience than average and supervises only two IT staff. However, the CIO's salary of \$85.5 is only about \$1,000 per year less than that of the DOH CIO. Finally, the experience of GSD's CIO is about half the average, which may be an additional cause for concern since it is the lead agency in the consolidation effort. See Table 3 at Appendix C for CIO status, salary and number of FTE supervised.

Of the 16 CIOs considered, three have classified status; the rest are exempt. It should be noted that only GSD's CIO is included in this analysis. For some reason, GSD has an ISD division director and a CIO. The CD director is included because he is responsible for statewide telecommunications, including the multi-million dollar Wire New Mexico initiative. He is co-equal to agency CIOs.

CIO responsibilities vary across state government, depending upon agencies' size, complexity and organizational structure. CIOs must play a key role in the decisions to initiate, expedite and cancel IT projects throughout their organizations. Until recently, CIOs have been responsible for the more traditional information resource management concerns, such as security and privacy; portfolio management; strategic planning; information architecture, collection and dissemination; records management; and systems development acquisition. Recently, however, the CIO is increasingly viewed as a change agent for agency business modernization, which is focused on information sharing and integrating business processes and systems across all levels of government to improve the level of services that citizens receive.

**CIO Turnover May Be Cause For Concern.** According to testimony presented before the U.S. House of Representatives Committee on Government Reform, Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census, the median tenure of a federal CIO is two years. Both current CIOs and former federal IT executives claim that three to five years is necessary to prove their effectiveness. Other IT research similarly refers to a "crisis of tenure" in the ranks of the CIO, where average longevity is reported as less than 30 months.

The OCIO's draft white paper listed 10 large and mid-sized agencies along with the names of incumbent CIOs. The table below shows that 60 percent of the agencies listed had turnover in the CIO position. Turnover of this magnitude may not only compromise agency IT strategies, but statewide consolidation efforts as well.

**Table 4. CIO Tenure**

Agency	CIO as of 7/03	CIO as of 6/06	Turnover
CYFD	Peter Ambs	Crawford Spooner	Y
DOH	Renee Martinez	Bob Mayer	Y
DOL	Terry Othick	Marlin Mackey	Y
DPS	Veronica Chavez-Neuman	Mike Mier	Y
GSD	Marcia Martinez	Karen Baltzley	Y
TRD	Noemi DeBodisco	John Salazar	Y
NMCD	Elisa Storie	Elisa Storie	N
DOT	Bob Ashmore	Bob Ashmore	N
NMED	Lynn Harris	Lynn Harris	N
HSD	Conny Maki	Connie Maki	N

Source: Draft White Paper Information Technology Management Recommendation, Agency Records

**CIO Reporting Structure and Division-Level Consolidation Need Improvement.** The OCIO's draft white paper stated that there were 63 IT units in state government and that 10 of the 63 accounted for nearly 80 percent of the IT operational budgets. The OCIO's draft white paper recommended that the 10 agencies with the largest IT technology spending should have a CIO with a strategic and operational role reporting to the agency secretary. Executive Order 2004-14 mandated that CIOs or IT leaders of cabinet and executive agencies report directly to the office of the secretary or director of their agency and that all IT functions and staff within

cabinet and executive agencies report to the agency CIO or IT leader of that agency. Any exceptions must be approved by the Governor's chief of staff or designee.

The Legislature responded by creating IT divisions during the 2005 legislative session. Laws 2005, Chapter 110, created IT divisions within

- Children, Youth and Families Department,
- Corrections Department,
- Department of Health,
- Environment Department,
- Taxation and Revenue Department,
- Labor Department,
- Human Services Department, and
- Department of Public Safety.

The Executive Order directive has not been completely addressed. Of the 15 agencies sampled, 10 CIOs report to the secretary or executive director. The balance of agencies sampled report to a deputy secretary. Seven IT divisions appear to be consolidated, with the rest having varying levels of decentralization. Only DPS and HSD were granted exceptions to this requirement. See Tables 4 and 5 at Appendix C for CIO reporting structure and status of division-level consolidation.

Control and accountability over the IT budget was another requirement of Executive Order 2004-14. It stated that the CIO or IT lead will be provided control and management of all IT expenses within the agency, either by the establishment of an independent IT organizational budget or by the establishment of administrative financial control of IT expenses within existing agency budgets, subject to the approval of the cabinet secretary.

Of the eight agencies with separate statutory IT divisions, DOH is the only one without a formal, separate IT budget. It is funded in administration, but other parts of project funding are included in the programs. IT payroll and other expenditures are tracked, but the big projects are in program budgets. According to DOH, IT operates just fine and does not have a budget staff person because they are part of administration.

Increasing competition to acquire and retain employees will present new challenges in recruiting and retaining skilled employees in the near and long term, with the crisis felt most acutely for higher skill sets, particularly technology. It is imperative that state agencies attract and retain talented, appropriately experienced IT leaders and staff to realize the full benefits of agency and enterprise technology solutions and to allow technology initiatives to move forward to meet public demand and to increase accountability.

### **Recommendations.**

- Reduce agency IT vacancies strategically, with a clearly detailed view of enterprise consolidation plans, GSD capacity and agency needs.
- Staff ISD adequately to provide the necessary management and support functions.
- Examine the causes underlying GSD's extremely high ISD vacancy rate. Address causative factors and reduce the vacancy rate to a level that does not present risk to the agency or state.

- Reexamine IT positions that have been frozen or that cannot be filled due to budget constraints. Consider lifting the IT hiring freeze pending a more detailed strategy for consolidating staff. Consider increasing the IT staffing budget if agency needs are not being met.
- Reassess the number of technical staff needed to support e-mail.
- Consider the following steps before proceeding with IT staff consolidation.
  - Reevaluate potential savings from enterprise network staff consolidation. Use more than simply job titles.
  - Reexamine in detail staff that supports infrastructure vs. staff that supports unique agency needs.
  - Identify the implications of transferring and not transferring specific personnel.
  - Determine and document the current skill inventory and what sort of skills will be needed in the enterprise organization.
  - Identify and document legacy capabilities in the departments and the skill sets required for maintaining legacy systems.
- Obtain designated exceptions if agency IT staff is not consolidated.
- Ensure that all large- and mid-size agencies have separate IT budgets controlled by the CIO.
- Ensure that CIO professional experience is balanced and that individuals possess all necessary credentials, knowledge, skills and abilities to successfully carry out unique agency responsibilities.
- Consider using a workforce planning approach to develop a plan specifically for recruiting and maintaining IT talent. An effective workforce plan (defined as having the right people with the right skills doing the right jobs at the right time) is goal-directed and involves analysis, forecasting, planning, implementing and evaluating. The potential benefits include attracting and retaining qualified staff, greater internal mobility leading to lower-than-average turnover and greater productivity.
- Create statutory IT divisions in the transportation and cultural affairs departments.

## DATA CENTER CONSOLIDATION

According to the 2003 Governor's Performance Review, five large agencies run their own data centers. A data center is a facility used to house mission-critical computer systems and associated components. It includes environmental controls (air conditioning, fire suppression, etc.), redundant/backup power supplies, redundant internet connections and high security. The Performance Review recommended operating only two data centers to produce savings. One of the three proposed consolidation levels in the IT Consolidation Plan is technical infrastructure: common services to be provided by GSD. It cites IT infrastructure as the most active arena of consolidation. One restructuring strategy is consolidating data center locations.

The May 2005 draft IT Consolidation Savings Plan states that one justification for the consolidation project is reduction of state IT infrastructure services costs by consolidating multiple agency data centers into no more than three enterprise-scale data centers. It is unclear if the overall IT consolidation plan involves operating two or three data centers.

The executive budget recommendation included consolidation of technology equipment and services in its FY07 budget recommendation as a way to become more cost effective and responsive. It indicates that GSD will

- Survey state agencies to determine the number and scope of data centers,
- Consolidate server space that will result in more efficient and cost-effective use, and
- Work with the OCIO to identify desktop and HelpDesk operations.

The purpose of GSD's IT program is to provide quality information processing services that are timely and cost effective so agencies can perform their missions efficiently and responsively. Customer satisfaction is one of the performance measures for this program.

Data centers continue to operate at a number of departments, including DOH, New Mexico Environment Department (NMED), CYFD, TRD, DOL, DOT and HSD.

**The Capacity And Growth Needs Of Distributed Data Centers Need To Be Assessed.** No assessment of the distributed data centers has been done to determine the current capacity and growth needs of each, although the Simms Computer Building Facility Planning Report prepared by Bridgers and Paxton Consulting Engineers, dated July 25, 2006, states that the phases include increased capacity in anticipation of consolidation. Therefore, it is uncertain that the planned upgrades will be sufficient to accommodate agencies' needs. GSD requested \$4 million in a capital outlay request in 2006 to upgrade the Santa Fe Disaster Recovery Center, which is the GSD data center, but no capital dollars were appropriated.

Continued agency business operations are at risk if six distributed data centers are consolidated into GSD's enterprise data center without an adequate needs assessments, necessary upgrades and proper risk planning. The state cannot afford a single point of failure. If one of the six distributed data centers experiences a disaster, it will not impact the others. However, if a disaster occurs in the enterprise data center, then all state government is impacted.

Storage capacity is one example of the need to assess agencies' data centers. GSD has 14 terabytes of storage. The table below shows that GSD does not have sufficient unallocated

storage capacity to accommodate the current storage capacity at the six agencies reviewed. The table does not include the 45 terabytes DOT has distributed at its other locations statewide.

**Table 5. Current Agency Storage Capacity**

Agency	Number of Terabytes
DPS	10
CYFD	1
TRD	20
DOH	9
DOT	45
HSD	12
<b>Total</b>	<b>97</b>

Source: LFC Interviews

Moreover, with ISD staff vacancies at 37 percent, GSD cannot fulfill its obligation as the enterprise service provider. (See detailed staff vacancy finding in the IT Staff Consolidation section.)

**Enterprise Physical Infrastructure And Human Resources Need To Be Enhanced To Successfully Accomplish Data Center Consolidation.** The Simms Computer Building Facility Planning Report prepared by Bridgers and Paxton Consulting Engineers, dated July 25, 2006, found that

- Chiller couplings are old and prone to failure,
- Chillers do not failover automatically,
- Chillers have no backup water supply,
- Hot and cold isle air distribution is not supported,
- Uninterruptible power supply (UPS) and telecommunication rooms do not have redundant cooling,
- Outside air intake louvers allow noxious air to contaminate the data center,
- Generators are 30 years old and have not been load tested,
- Power distribution configuration does not allow for dual power cable feed to server racks and there is little room to add more electrical panels,
- Uninterruptible power supply is near capacity, and
- Air distribution system is at or over capacity, as shown in Table 1 at Appendix D.

The report recommends a three-phase, \$7.2 million approach to remedy the deficiencies (age of equipment and increased servers) and increase capacity in anticipation of new computers from the consolidation effort. See Table 2 at Appendix D for detail.

**Execute Service Level Agreements For All GSD-Provided Services.** Service level agreements (SLA) are important in operating a data center because they help transform IT from a reactive mode to one with clear performance objectives and measurements. SLAs are contracts for the delivery of a specified level of service and connect IT more directly to the service requirements of client agencies. An IT department can justify its investment to develop SLAs in terms of increased operational efficiency and customer satisfaction, both critical to the success of IT consolidation projects. By using properly designed SLAs, IT increases its accountability and value and agencies obtain a better way to evaluate IT investments in terms of business results.

The 2003 Governor’s Performance Review recommends that SLAs be executed for all enterprise services. It further states that best practices in private industry and other state governments call for IT services to be provided under an SLA. According to the report, the SLA should have a broad scope, covering all aspects of service, and should address such issues as problem management, compensation, warranties and remedies, resolution of disputes and legal compliance. It further states the SLA frames the relationship and determines major responsibilities during times of normal operation and emergencies.

Although GSD has prepared standard SLA that include e-mail, desktop support and shared and co-located services, final SLAs are not in place for 61 percent of e-mail clients served and 50 percent of shared and co-located service clients. One SLA for shared services was reported as finalized, but is not signed. Many SLAs are still in the process of negotiation or are awaiting agency review or pending signature. The following table shows the current status of SLA completion.

**Table 6. Service Level Agreement Status  
as of 6/30/06**

Service	Signed	Negotiating or Pending Signature	None	Total
e-Mail	3%	36%	61%	100%
Desktop Support	100%	0%	0%	100%
Shared and Co-location Services	22%	28%	50%	100%

Source: GSD Data

The consolidated e-mail system went live in June 2005. One year after going live, GSD has signed SLAs from two agencies out of 61 that outline the terms, agreements and responsibilities of both parties. Without a signed SLA, neither GSD nor the agencies can be held accountable for actions and inaction that impact statewide e-mail.

The SLA between GSD and DOL includes all the necessary elements. However, in the event of “e-mail service unavailability,” DOL has to request that GSD calculate the unavailability by month and then request a credit. The unavailability or outage period begins when DOL opens a trouble ticket. Putting the burden of notification on the client is an example of poor quality service.

**Early Application Of FY08 GSD/ISD Rates Impacts Agencies.** Some agencies’ FY07 budgets were hard hit by the new rates, while other agencies benefited to varying degrees. Agencies with a negative impact must either request supplemental appropriations or reduce funds for other activities, which may affect program performance. GSD estimates an overall net savings across all agencies of about \$2.4 million.

The dramatic impact of the rate change had three causes: (1) rate structure revision (collapsed 28 services into eight), (2) early application of FY08 ISD rates, and (3) rate changes brought about by conversion to the SHARE system. Many agencies (for example, DOT) experienced rate reductions when they converted to SHARE because legacy accounting systems no longer must be maintained.

In FY03 and FY04, the federal government audited ISD rates and concluded that federally supported programs were overcharged by \$3.4 million and \$4 million, respectively. The OCIO issued a rate study in November 2005 to address this situation. In September 2006, GSD reported that ISD rates had been aligned with the OCIO study and that under-billings had produced operating losses. The decision was made to implement restructured FY08 ISD rates early to cover the operating losses. The table below is a partial list of agencies impacted. The net impact shown is 84 percent of total estimated savings.

**Table 7. Estimated FY07 Budget Impact from Early Application of FY08 GSD/ISD Rates**

(net impact > \$20 thousand)

Agency Name	FY07 Budget (Increases) or Decreases	Agency Name	FY07 Budget (increases) or Decreases
TRD - MVD and ONGARD	(\$637,680)	PED	\$40,851
HSD	(\$469,969)	OWTD	\$45,175
State Land Office	(\$73,842)	ALTSD	\$53,461
Public Regulation Commission	(\$48,824)	Board of Nursing	\$57,945
Worker's Compensation Administration	(\$46,399)	NMCD	\$64,325
State Engineer's Office	(\$29,518)	CYFD	\$79,980
Educational Retirement Board	\$21,383	State Treasurer	\$84,994
Administrative Office of the Courts	\$21,850	DPS	\$105,475
Regulation and Licensing Department	\$23,340	DFA	\$258,788
NMED	\$31,387	DOH	\$600,445
Miners' Hospital	\$31,627	GSD – HRS	\$606,171
Department of Military Affairs	\$36,700	DOT	\$1,204,316
<b>Net Savings</b>			<b>\$2,061,981</b>

Source: GSD Data

GSD staff noted that ISD rates do not currently reflect costs associated with providing SHARE system support. The Department of Finance and Administration and the State Personnel Office provide support, in addition to GSD. All agencies supporting the SHARE system still need to establish baseline costs; define appropriate rate structures; and consider cost-reimbursement mechanisms.

### **Recommendations.**

- Halt the migration of agency servers or entire data centers until enterprise physical infrastructure and staffing is sufficient to accommodate the load.
- Perform a full data center assessment including cost to operate distributed and enterprise data centers.
- Use the diagram at Appendix D as a guide to conduct data center planning.
- Consider best practices to achieve energy efficiency and reduce data center operating costs.
- Require all agencies to finalize and sign SLAs for all services provided. Add provisions for penalties and remedy if services are not being provided as agreed and monitor for compliance.
- Hold GSD and agencies accountable for any breach of the SLA.

- Provide enterprise IT staff with intelligent management tools that allow them to prioritize the diagnosis and resolve problems based on the penalties associated with the problems
- Develop the ability to collect measurements from service components offered and correlate those into meaningful service-level metrics.
- Request sufficient capital outlay funds to complete the data center improvements.
- Communicate with agencies about changes to the rate structure early enough for proper budget planning.
- Consider applying agency ISD rate-change savings to address FY07 agency supplemental appropriation requests.

## e-MAIL CONSOLIDATION

Laws 2004, Chapter 114, Section 8, Subsection 12 appropriated \$1.1 million “for initiating a consolidation of agency e-mail servers into a single enterprise-wide e-mail system.” GSD was identified as lead agency. The funds were to be used for an e-mail consolidation plan, including a five-year cost analysis of enterprise options, potential cost savings, and a strategic plan for enterprise directory services and identity management.

The 2003 Governor’s Performance Review projected savings of \$1.4 million by eliminating 31 full-time e-mail support staff and consolidating e-mail support personnel. Rather than using a phased approach as outlined by the appropriation, the state took the initiative to gain economies of scale by implementing e-mail consolidation. The e-mail system came online in June 2005 after several missed implementation dates.

According to the draft e-Mail Project Management Plan, consolidation of agency e-mail systems is particularly important to many state agencies that struggle to administer private systems with a lack of training, budget and sufficient administrative staff to support individual systems. Consolidation also solves the problem of different e-mail systems being interoperable and provides many benefits to all stakeholders. The multi-agency steering committee decided to use qualified technical resources from a number of representative agencies in addition to staff from GSD to provide sufficient resources to research and prepare a enterprise e-Mail Consolidation Plan [**one was not written**] that will meet both legislative and IT Commission requirements for project certification because of the limited funds appropriated.

**Improved Accounting Over e-Mail Appropriation Is Needed.** The table below, based on the FY05 trial balance, shows how GSD used the \$1.1 million appropriation from Laws 2004, Chapter 114. The records at GSD are incomplete so reported expenditures could not be verified. According to GSD, the FY05 budget status report was not reconciled and balances were not properly carried over to FY06 or to FY07. Although GSD accounted for the special appropriation separately, good accounting records were not kept for the entire project. As a result, \$117.4 thousand of badly needed funding must be reverted.

**Table 8. Appropriation Expenditures for FY05**  
(in thousands)

Purpose	Amount
<b>Appropriation – Laws 2004</b>	<b>\$1,100.0</b>
Technical Services	\$647.8
Equipment Lease	\$241.6
Employee Training	\$80.8
Equipment	\$48.2
Professional Services	\$12.5
Technical Services-credits	(\$48.3)
<b>Total</b>	<b>\$982.6</b>
<b>Estimated Balance</b>	<b>\$117.4</b>

Source: GSD Records

GSD implemented a consolidated e-mail system that was not properly planned and did not consider growth or the impact of the now-mushrooming Outlook 2003 clients. Furthermore, it did not produce a strategic plan for enterprise directory services and identity management.

GSD entered into contracts for hardware, training, implementation and migration services, and technical support. The majority have monthly payments extending from 48 to 60 months. See Table 1 at Appendix E for contract detail. In its contract, Microsoft was responsible for implementation and migration services. It was not responsible for

- Building a complete operations framework,
- Training users,
- Consolidating and training HelpDesk staff,
- Migrating or updating messaging system, and
- Upgrading or standardizing desktop clients.

GSD had to procure these items separately.

According to the draft e-Mail Project Management Plan, for a project to be under control, it needs to be organized as a closed system. (In technology, a closed system is one in which specifications are kept proprietary to prevent third-party hardware or software from being used.) Establishing baselines for scope, cost and schedule, and then using some form of version control can produce a closed system. Once the project has been contained in these three dimensions, it can be measured, monitored and controlled. If a project does not have such baseline management, it cannot be managed and measured as a closed system, and must be therefore considered to be out of control. No meaningful performance measurement can be made where the scope, cost and schedule are not bounded and under some form of change control discipline.

Audits of Governmental Entities, 2.2.2 NMAC, requires agencies to maintain adequate accounting records and to account for specific appropriations separately.

**Hardware Lease Increased Cost And Adds More Cost At The End Of The Hardware's Useful Life.** GSD entered into a five-year lease for computer hardware, servers and a storage area network. According to the contract, GSD will pay equal monthly payments of \$34.5 thousand plus tax for 60 months. GSD must buy the leased equipment at fair market value at the end of the lease. Had GSD purchased outright, the equipment would have cost \$1.7 million. Because the agency chose to enter into a long-term lease, it will pay an additional \$200 thousand over the life of the lease plus an estimated \$100 salvage value. Payments in years two through five are discounted by five percent per year.

At the end of the lease period, GSD has two options. The first option, mentioned above, is to purchase the equipment at fair market value, at which time it will be at the end of its useful life. GSD must pay for equipment that most likely is obsolete; yet the same amount of money could purchase better, faster and cheaper technology. The second option is to return the equipment to the lessor, but GSD will have to uninstall all e-mail software and data and the state will be left without an e-mail system.

If GSD has no funds or insufficient funds for the lease payments, the lease terminates and GSD will have to return the equipment to the lessor. GSD's plans for equipment replacement are not clear. In its FY08 IT plan, GSD reported that a major IT issue/concern is the lack of an equipment replacement revolving fund to replace end-of-life equipment without sacrificing daily operations base budget and being at risk of not being able to meet other contractual monetary

obligations. The equipment replacement funds were merged into the operating funds in FY02, according to the notes to the financial statements for that year.

**Unplanned Outlook 2003 Deployments Caused Interruptions In e-Mail Services.** During the 2006 legislative session, agencies experienced delayed access or no access to the e-mail system. It is important to note that the e-mail system did not go down even though it appeared like that to some agencies. Small agencies appeared unaffected.

Identifying sizing as the driver of the overall scale of implementation, Microsoft recommended minimum hardware configurations to support 20,000 users. GSD followed and in one case exceeded Microsoft's minimum recommendations to better balance e-mail traffic when problems arose. See Table 2 at Appendix E for recommended and actual configurations. Microsoft also recommended a new storage area network (SAN) since GSD's SAN was not suitable to support the Exchange server.

GSD's e-mail staff determined that the problem during the 2006 legislative session was not simply the number of servers, but was twofold: the number of unknown and unplanned Outlook 2003 (thick client) deployments by agencies and how network addressing translation is done.

Thick client provides more functionality than Outlook Web Access; therefore, agencies prefer it to Outlook Web Access (see Table 3 at Appendix E for detailed comparison). Improved functionality is desirable, but not at the risk of negatively impacting other e-mail users in state government. Eight of the largest agencies that deployed thick client are shown in the table below. Some agencies were conservative in their deployments while others were more generous.

**Table 9. Sample of Agency FTE with Thick-Client Functionality**

Agency	FTE- Authorized	FTE- Actual	Number of Thick Clients	Percent of Actual FTE with Thick Client
TRD	1,165.7	981	150	15%
DCA	579.9	528.25	472	89%
HSD	1,913	1,661	1,100	66%
DOH	4,149.75	3,697.66	300	8%
NMED	672	652.39	642	98%
CYFD	2,076.53	1,895.03	1,200	63%
NMCD	2,343	1,985.39	65	3%
DOT	2,778.63	2,424.95	1,800	74%

Source: July 1, 2007 TOOL and Agency Interviews

Unplanned and continually increasing thick-client deployments will continue to create e-mail traffic imbalance until a permanent solution is employed. Thick-client deployments were not part of the e-mail consolidation project. They were left up to the discretion of the agencies, and the potential impact of numerous thick client deployments was apparently not considered by project staff. There was no formal prohibition or requirement regarding the deployment of thick client because the SLAs for e-mail were not in place before the June 2005 go-live date. See Table 4 at Appendix E for GSD's analysis and further explanation.

The current network address translation configuration adds to unequal load distribution. Network address translation works like a receptionist that receives all incoming telephone calls and then routes them to the appropriate person. This sounds like a good idea until there are so many calls that the receptionist cannot keep up. The current network configuration works in a similar way, but adds a new twist. The first incoming call from a large agency commits the receptionist to respond only to calls from that agency (because the server knows the number of connections needed for the agency). Other receptionists must then handle all the other incoming calls. The solution is to add more addresses so that the traffic is coming in smaller segments. This may also help identify where problems originate.

In addition to the two major issues discussed above, GSD's e-mail staff must contend with what to do about inactive accounts. For agencies using thick client, this is not an issue because they can store the e-mail on a user's desktop. Agencies with only Outlook Web Access or limited deployment of thick client must rely on GSD's limited storage. The risk of losing important data increases as storage reaches capacity and GSD has to purge old information.

### **Recommendations.**

- Account for all future special appropriations separately, completely and accurately.
- Use special appropriations for the intended purpose.
- Request the OCIO's help in obtaining an inventory of all Outlook 2003 client deployments.
- Redesign the network to provide for authentication and authorization of users so that the state can have a "trusted network."
- Communicate with agencies about changes to the rate structure early enough for proper budget planning.
- Keep the rates on GSD-ISD webpage current.
- Start planning immediately for equipment replacement so that availability of e-mail services are not placed at risk as the equipment reaches its useful life.
- Establish a revolving equipment replacement fund. Analyze financial records to identify any former equipment replacement fund balances that can be transferred. If necessary, request an appropriation for initial funding. Account for equipment replacement funds separately.
- Adopt a policy requiring removal of e-mail accounts not used for 90 days or more unless an agency has notified GSD of an extenuating circumstance that requires the account to be retained.
- Work with agencies to accommodate for special needs when failure to do so puts business critical data at risk.

## ENTERPRISE AND AGENCY-LEVEL SECURITY

Computer security is the protection of computer systems and information (information assets) from harm, theft and unauthorized use. In government, all agencies and employees have an obligation to work toward the adequate protection of information system assets.

Information assets can be broken down into two components: physical assets such as people, hardware, facilities and documentation and logical assets such as data or information and software.

Adequate security is the condition where the protection strategies for an organization's critical assets and processes are commensurate with the risk an organization is willing to assume and how much risk the organization can tolerate. The level of risk an organization can tolerate determines the level of security to employ.

With tightening budgets and constantly striving to reduce expenditures, investing in security is sometimes difficult to justify. Yet security investments often result in cost avoidance. Some consider cost avoidance as critical as cost savings since both can impact an enterprise's bottom line. Cost avoidance can be proactive or preventative. Examples of cost avoidance include secure software design, timely software patching, complying with regulations and proper software licensing.

**Complete The Establishment Of An Enterprise And Agency-Level Security Program.** A successful security program is built on four cornerstones: organization, assessment, policies and architecture; and relies on governance and awareness.

***Enterprise- And Agency-Level Security Organizational Structure Needs Improvement.*** Security is primarily handled on an agency-by-agency basis without strong direction from the top. Without strong direction, the capability and authority to effectively and efficiently issue and enforce security policies across multiple agencies does not exist, nor does the capability to respond to security incidents across multiple agencies.

At the enterprise level, one person serves as both the state CIO and the state chief information security officer. None of the seven agencies (names of agencies are not disclosed for security reasons) reviewed has one individual whose sole responsibility is security; instead, all have one or more individuals assigned to handle security. The following table shows the reporting structure for all the individuals assigned security responsibilities. Three of the seven agencies had individuals who handle building security as their only or primary responsibility. Individuals with building security responsibilities report to the CIO, the Administrative Services Division Director or to a program director.

**Table 10. Reporting Level of Staff Assigned Security Responsibilities**

Agency	Reporting Level
1	CIO/ASD Director
2	CIO
3	CIO
4	Deputy CIO/Program Director
5	CIO
6	Two levels below CIO
7	CIO

Source: Agency Interviews

According to Gartner, a chief information security officer should be part of management, not report to the agency CIO since those two functions have conflicting responsibilities, have a solid background in security, be a strategic thinker, politically savvy, and have good knowledge of the business.

**Improvements Have Been Made In Vulnerability And Risk Assessment.** The 2003 Security Assessment and Strategic Plan, for which the state paid \$100 thousand, included a survey that was sent to all executive agencies. The survey response rate was not disclosed. The eight agencies reviewed have made improvements in addressing weaknesses identified in the 2003 assessment. Table 1 at Appendix shows the improvements

To date, the OCIO has conducted assessments of three agencies with the assistance of agency-assigned staff; however, a full penetration test at the enterprise level to determine overall vulnerabilities is not complete.

The IT Risk Management Standard Policy, STD3.001, requires agencies to perform annual risk assessments and submit them to the OCIO using the online tool at the OCIO website, but the tool could not be found on the OCIO website. The table below shows when the selected agencies had a network assessment done using a contractor or internal resources.

**Table 11. Network Assessments Conducted**

Agency	Year	Type
1	2006	Contract
2	2005	Contract
3	2004	Contract
4	2006	Internal Scans
5	2006	Contract
6	2005	Internal
7	N/A	No

Source: LFC Review

Without an up-to-date risk or vulnerability assessment, agencies cannot know what their exposure may be or how to protect information from improper access.

**Enterprise And Individual Agencies Security Plans Need To Be Published And Adopted.** The OCIO paid slightly less than \$30 thousand for a Baseline Security Program Plan that provides less information and guidance than did the Conceptual Design of the New Mexico State Government Information Technology Security Program and the Statewide Security Assessment

Strategic Plan, even though the Baseline Security Program Plan is characterized as a “cookbook of what is needed.”

Additionally, “the guidelines in the plan are not mandatory or binding in its adoption, implementation or rejection” for the state; therefore, agencies do not have to follow it. A security plan should document the current and future state of security and how to move from the current to the future to ensure systems and the data that resides in them are safeguarded. One agency has the beginning of a plan, but needs to include other mission-critical system before it is complete. In its FY08 IT plan, GSD cited the “lack of state standards that define the IT infrastructure design, operational framework, policies and services” as a major IT issue/concern.

A security plan provides the requirements of a system or systems and the controls in place and planned to meet the established requirements. The plan outlines the responsibilities and expected behavior of anyone who accesses the system or systems. The plan requires that agencies have an inventory of physical and information assets, a risk assessment, a checklist of strengths and weaknesses if not already included in the risk assessment, an evaluation of the issues identified and actions needed to correct deficiencies, assignments and dates for implementing various parts of the plan. Appendix F provides an outline of what should be included in a security plan. Agency security plans are agency specific while the state security plan is enterprise specific.

***Agencies’ Policies Are More Specific Than 1.12.10 NMAC.*** The agencies require employees to sign an acknowledgement form stating that they have read and agree to abide by Internet, Intranet, E-mail and Digital Network Use, 1.12.10 NMAC. Agencies that are required to follow federal requirements such as the Health Insurance Portability and Accountability Act, Federal Bureau of Investigations or Internal Revenue Services have a higher level of security than the state standard.

The OCIO has 16 policies posted on its website that deal with information security. According to the language in each of those documents “implementation of the policies is the responsibility of the agency secretary and its CIO.” The onus is placed squarely on each agency to make security management part of strategic and operational planning; protect IT resources; provide adequate security; ensure effective operations; establish an IT security program; communicate security policies and standards; and identify, define and resolve security roles and responsibilities. Although the agencies stated that they follow the policies posted on the OCIO website, further work is required to determine if agencies comply with the other 15 policies.

Protecting information against identity theft goes hand-in-hand with privacy and security practices. Executive Order 2005-27 directed state agencies to take specific actions to protect sensitive information against identity theft and established a task force to study and make recommendations to the Governor regarding the handling, storage and disposal of sensitive information by state agencies. The task force found that only three of 10 cabinet agencies responding to a survey reported having security policies in place for handling paper and electronic documents containing personal identifiers. Half of the agencies reported having records management policies and procedures that address disclosure of confidential information.

The task force’s recommendations included (1) requiring agencies to adhere to New Mexico Administrative Code governing management of electronic records and destruction of public

records; (2) establishing a state government enterprise information security program to encompass technical and policy best practices and that sets timelines for implementation, including individual agency review and implementation; and (3) establishing an information privacy governing body to gather, develop and maintain all policies and laws applicable to ensuring privacy of confidential information.

***Complete The Enterprise-Wide Information Security Architecture.*** The enterprise information security architecture is a key component of a security program that provides the mechanisms to enable the translation of business requirements and best practices into operational security and risk management solutions. Business, information and technical viewpoints should be included in the architecture. Security architecture provides the framework and foundation to enable secure communication, protects agency business processes and information resources, and ensures that new methods for delivering service are secure. It is a blueprint.

The OCIO paid slightly less than \$22 thousand for an enterprise security architecture framework, but the document appears to be incomplete. The framework is described at the conceptual level and does not include a logical or implementation level. Moreover, the document contains suspension dots that indicate an incomplete thought and the cited appendices are not part of the document.

***A Comprehensive Security Education and Awareness Program Needs To Be Developed.*** GSD and individual agencies reviewed do not have formal training or education and awareness programs. Additionally, each has a slightly different way of reporting security incidents. The agencies reviewed had varying degrees of policy adoption and education. All the agencies reviewed included security policies as part of new employee orientation and posted changes to their intranet or sent security policy updates to employees by e-mail.

Policies should be communicated to employees and other users so that they understand their responsibility in protecting the agency and the state against security breaches. The Security Training and Awareness Policy, S-POL3.001, requires agencies to create, review and update training content; make policies, procedures and standards available electronically or in hardcopy; and define IT security roles and responsibilities.

***Incident-Reporting Requirement Needs To Be Communicated.*** A statewide information protection center has not been established. Although a computer security incident response team has not been designated, the OCIO has formed an ad hoc group to help with security. The Incident Response and Reporting Policy, STD12.001, requires agencies to report cyber incidents to the statewide information protection center within one hour of detecting an incident and to complete a computer security incident response team report. The policy also requires all agencies to be members of the computer security incident response team.

***Disaster Recovery And Business Continuity Plans Need To Be Written And Tested.*** Some agencies had a draft plan; at least one was simply a template without agency-specific information. When a disaster recovery plan was tested, in most cases no changes were made to the plan to incorporate any lessons learned. One agency's plan dated back to Y2K and identified some individuals who are no longer employed by state government. Further work toward

establishing agency security programs remains outstanding because agencies lack financial resources and have high technical staff vacancies.

The issue of disaster recovery and business continuity planning is one of cost avoidance and avoidance of public embarrassment in not being able to do the state's business. The disaster recovery plan is a survival tool to help agencies recover in the wake of an event that disrupts normal government operations. Provided the plan is supported by management and staff, updated frequently, and maintained and tested, it offers the chance to survive a disaster. Unless a disaster recovery plan is tested, it seldom remains usable. A practice test of a plan could very well mean the difference between its success and failure. Organizations are often unwilling to carry out a test due to the disruption to daily operations, the unwillingness of business functions to participate or the fear that a real disaster may arise as a result of the test procedures.

**Appropriated Funds Were Used For Critical Security Needs Rather Than Program Development.** Enterprise security consolidation received \$800 thousand in appropriations. See Table 2 of Appendix F. In the first year, the appropriation of \$100 thousand was used for its intended purpose, but in the second year, only \$53.5 thousand out of a \$700 thousand appropriation was used for specified purposes. The \$401 thousand expended for Websense (internet filtering) and MessageLabs (email filtering) temporary licenses supported the e-mail consolidation initiative. Purchase of a virtual firewall and related software, although necessities, is not implementation of a threat and vulnerability reduction function. It is merely one activity of the overall ongoing function of threat reduction.

### **Recommendations.**

- Create a business-driven security program that allows management to incorporate information security risks into overall risk management decisions. Use the four major components identified in the conceptual design and the security assessment and strategic plan to develop the enterprise security program. Move past the conceptual level of security architecture to the logical and implementation levels.
- Create an organizational structure at the enterprise and agency level that includes the appropriate reporting structure and chief information security officer qualifications.
- Develop enterprise- and agency-level security plans that include a complete inventory of physical and information assets, a risk assessment and corrective action, including the names of individuals responsible for correcting the deficiencies and the expected date of completion. Use Figure 1 at Appendix F as a guide.
- Make the online assessment tool available to agencies to assist with annual risk assessment reporting.
- Implement enterprise-level security to include strict federal requirements.
- Select agencies with the most critical data and audit for compliance with OCIO policies.
- Develop and adopt an enterprise security architecture that supports and complements the enterprise architecture.
- Promote ongoing employee security awareness and training by partnering with State Personnel Office and agency human resource programs.
- Employ a phased approach to disaster recovery plan testing to build up to a full test. Consider the following steps.
  - Begin testing by using desk checks, inspections and walkthroughs.

- Next, a disaster can be simulated at a convenient time (during a slow period in the day). Staff also might be given prior notice of the test so they are prepared.
- Finally, simulate a disaster without warning.
- Review all contracts that outsource data gathering and data maintenance to ensure that all state-owned data is secured and includes backup and recovery.
- Implement the 2005 recommendations from the Governor's Task Force on Protecting Information against Identity Theft.

## IT CONSOLIDATION SAVINGS

**A Structure To Measure Current, Actual IT Costs Needs To Be Developed.** A final IT Savings Plan has not been published. As a result, projected cost savings cannot be supported and actual cost savings cannot be calculated and demonstrated. In some cases, enterprise project investments have either lost funding or GSD cannot demonstrate that funding has been recouped. In other cases, agencies are incurring higher costs after consolidation.

The purpose of the draft IT Savings Plan, dated May 2005, was to develop the management structure for producing project plans and budget methods to measure and realize savings to state government as a result of migrating to a consolidated IT infrastructure. The plan states that

- Realizing savings from migrating from a decentralized IT infrastructure is not free of risk.
- Organizations that have succeeded in moving from decentralized to centralized infrastructure have not always realized savings as high as early forecasts.
- The state faces the additional challenge of not having reliable data on its current expenditures for IT as a baseline for estimating potential savings from consolidation.
- Any forecast of savings must be tempered by consideration of the potential transition costs from a decentralized to a centralized infrastructure.

The plan did not include a forecast of future financial savings. Rather, it provided a roadmap for the state to develop the ability to measure its IT investments and operating costs, with the option of creating its own organization that would own and operate IT infrastructure.

According to the plan, critical success factors include the following:

- A committed governance structure,
- Infrastructure that is deployed based on verifiable user needs,
- GSD providing agencies with equal or better services than they are currently obtaining, and
- Minimal effect on agency budgets.

Further, it was assumed that GSD would assign the necessary workforce to the project. Known deficiencies were: (1) the Department of Finance and Administration would develop an estimate of what the state spent in FY04 and FY05 for IT products and services, and (2) the OCIO would work with the State Budget Division and the SHARE project to develop a budget model for enterprise IT and account codes to accurately identify IT expenditures.

Being unable to measure the status quo will create challenges in assessing the cost to customers for the new consolidated operation. In a consolidation effort, an assessment should be made of what can and cannot be measured early in the process.

**Projected IT Consolidation Savings Are Difficult To Substantiate.** No reliable, documented evidence was provided to support actual FY05 IT consolidation savings. The table below shows the basis for the initial IT savings projection of \$19.3 million.

**Table 12. Projected IT Consolidation Savings Report for the Period July 2004 - March 2005**  
(in thousands)

Action	Projected Cost Saving
Freezing currently vacant IT positions	\$4,391.0
Projected GSD savings through operating budget reduction	\$6,733.0
Projected savings from agency IT attrition	\$2,800.0
Freezing agency hardware and software acquisitions	\$5,400.0
<b>Total</b>	<b>\$19,324.0</b>

Source: IT Consolidation Savings for FY05 Dated for the Period 7/04 - 3/05

Actual savings from freezing agency hardware and software acquisitions cannot be calculated because agency costs based on FY04 and FY05 expenditure data are not known. Similarly, realized staff savings from freezing positions and vacancies have not been calculated based on actual expenditures.

The table below shows that ISD and CD operating budgets were reduced by about \$9.8 million from FY04 to FY05, which is greater than the \$6.7 million projected. However, such a drastic operating budget reduction has hampered GSD's effectiveness in planning and implementing consolidation projects.

**Table 13. GSD Operating Budget Reduction FY04 to FY05**  
(in thousands)

Division	FY04 Budgeted <sup>(1)</sup>	FY05 Budgeted
ISD	\$51,031.1	\$22,626.1
CD		\$18,642.6
Total	\$51,031.1	\$41,268.7

Source: LFC Appropriation Recommendations for FY05 and FY06

(1) ISD and CD budgets were combined.

GSD has primary execution responsibility for the IT Consolidation Plan. It is the lead agency for all implementation projects for consolidated infrastructure services. A critical consolidation success factor is that GSD must provide equal or better services than agencies are now receiving. GSD cannot effectively fulfill its role without adequate resources.

***Projected Savings From Consolidating Network Administrators Could Not Be Achieved.*** The 2003 Governor's Performance Review stated that \$4.9 million per year would result from savings achieved if network administrators were consolidated. Further, cost savings of \$1 million per year could be achieved through staff savings if e-mail systems were consolidated. Vacancy savings calculated on all IT positions vacant as of 7/1/06 totaled \$9.5 million. Of that amount,

only \$863.5 thousand could be attributed to network specialists. The earliest vacancy dates back to July 1, 2002, and spans four years. See Table 1 at Appendix G for more detail.

Agencies are turning to outsourcing to augment staff shortages. A cursory review of a few large agencies' IT contracts issued in FY06 showed that \$1.7 million was expended for staff augmentation. The table below shows that GSD accounted for 52 percent of the total.

**Table 14. IT Contracts 7/1/05 - 6/30/06**

Agency	Staff Augmentation
GSD	\$882,795
DOH	\$565,522
TRD	\$124,382
CYFD	\$80,979
DPS	\$32,269
<b>Total</b>	<b>\$1,685,946</b>

Source: Department of Finance and Administration Contracts Listings

*e-Mail Consolidation Savings Have Not Been Realized.* The appropriation for initiating e-mail required GSD to provide a five-year cost analysis of e-mail options and potential cost savings to be realized by agencies. GSD surveyed agencies and found that “there is simply no good method for estimating cost savings by agency due to the vast differences in service delivery and service quality among agency e-mail system implementations.” Nonetheless, GSD presented the following as estimated savings for consolidated e-mail versus distributed e-mail.

**Table 15. Five-Year Cost Savings Comparison**

(five-year cost in thousands)

	Cost Per Box	Five-Year Cost
Distributed e-Mail (20,000 users)	\$21.61	\$26,595.0
Consolidated e-Mail (20,000 users)	\$12.16	\$15,132.0
Five-Year Savings		\$11,460.0
<b>Estimated Annual Savings</b>		<b>\$2,292.0</b>

Source: e-Mail Project Management Plan

Eight large agencies' e-mail costs are higher post consolidation, contrary to the draft e-Mail Consolidation Project Management Plan's assertions. In 2004, eight of the larger agencies provided estimated baseline costs to acquire, maintain and support individual e-mail systems. Agency-estimated baseline costs ranged from a low of \$0.74 to a high of \$4.78. An analysis of that information showed that agencies were paying \$2.71 per user per month to acquire, maintain and support their own e-mail systems versus the \$21.61 that the project team reported in the draft e-Mail Project Management Plan. Current analysis of FY06 GSD billing for those same agencies shows that they are paying an average \$10.15 per mailbox per month. (See the table below.) The rates for FY08 have increased to \$10.62 per mailbox per month plus \$8.38 for additional storage. The per-mailbox rate does not include labor costs for restoring accounts or Blackberry support. All of those are extra (see Table 2 at Appendix G for detail). A review of the components of the FY08 e-mail rates showed that the \$10.62 per mailbox per month is based on documented verifiable information. The e-mail costs for the legislative and judicial branches increased by 16

and 21 percent, respectively, because of upgrades to e-mail and anti-spam software and hardware.

**Table 16. Analysis of Pre- and Post- Consolidation e-Mail Costs**

<b>Agency</b>	<b>Pre-Consolidation Annual Costs (2004)</b>	<b>Post-Consolidation Annual Costs (2006)</b>	<b>Cost Increases</b>
TRD	\$19,500.00	\$97,909.00	\$78,409.00
NMED	\$5,798.64	\$79,105.35	\$73,306.71
CYFD	\$83,574.72	\$265,704.00	\$182,129.28
DCA	\$0.00	\$66,891.00	\$66,891.00
HSD	\$167,042.00	\$210,978.13	\$43,936.13
DOH	\$192,156.00	\$316,352.00	\$124,196.00
NMCD	\$18,600.00	\$141,968.05	\$123,368.05
DOT	\$51,120.00	\$316,352.45	\$265,232.45
<b>Total Increases</b>			<b>\$957,468.62</b>

Source: LFC Analysis

According to the draft e-Mail Project Management Plan, the maintenance of separate e-mail systems for each agency imposes significant cost on the state. Redundant licensing agreements, hardware configurations, different security policies and operational frameworks introduce fragmentation that is difficult to overcome. This fragmentation also inhibits interagency or even intra-agency communication. However, with consolidation of e-mail, the legislative branch no longer has access to the global address list nor does the executive branch have access to the legislative address list. According to GSD, the list would be a virtual nightmare to maintain, and would require the legislative branch to be part of the executive's e-mail domain.

No positions have been eliminated to achieve the \$1.4 million savings projected in the August 2003 Governor's Performance Review. The savings were based on eliminating 31 full-time e-mail support staff and consolidating e-mail support personnel. Staff that supported e-mail at the various agencies were not supporting e-mail full-time. The quarter time or less one full-time-equivalent employee spent supporting and maintaining e-mail at an agency was simply absorbed to assist in other areas.

***Potential Savings From Consolidating Agency Data Centers Is Difficult To Quantify.*** The draft IT Consolidation Savings Plan indicates that a fundamental objective of the IT consolidation effort is to reduce the number of agency-level data centers in state government. It further states that realizing savings from migrating from a decentralized IT infrastructure is not risk free and that organizations that have succeeded in moving from a decentralized to centralized infrastructure have not always realized savings as high as early forecasts. It identifies unreliable data of current IT expenditures as a challenge to developing a baseline for estimating potential savings from consolidation.

The draft savings plan also lists two of its business objectives.

- Develop an estimate of baseline IT infrastructure costs by agency and office complex.
- Identify savings from IT consolidation activities and projects.

Agencies do not keep information about how much it costs to operate their data centers. GSD Building Services Division can probably produce a rough estimate of what it costs to power, cool

and secure the enterprise data center. Without accurate information about the costs of operating individual agency data centers and the enterprise data center, there is no way to know if any cost savings have been or ever will be realized.

***Telecommunications Savings To Support One Appropriation Could Not Be Replicated.*** The savings estimate used to support a \$4.8 million 2006 appropriation for Wire New Mexico was based on a guess, not on concrete, verifiable and substantiated data. The \$227 thousand per year savings estimate for six cities could not be supported. Laws of 2004, 2005 and 2006 require a cost and savings analysis, but one has not been done because GSD claims it cannot get circuit cost data from the agencies.

Moreover, GSD does not have a comprehensive inventory of all the telecommunication circuits, other than those directly leased by GSD. Without a comprehensive inventory, it is not possible to calculate the number of circuits that will be eliminated, the resulting cost savings or the impact to local telecommunication companies that depend on state government agencies as anchor tenants.

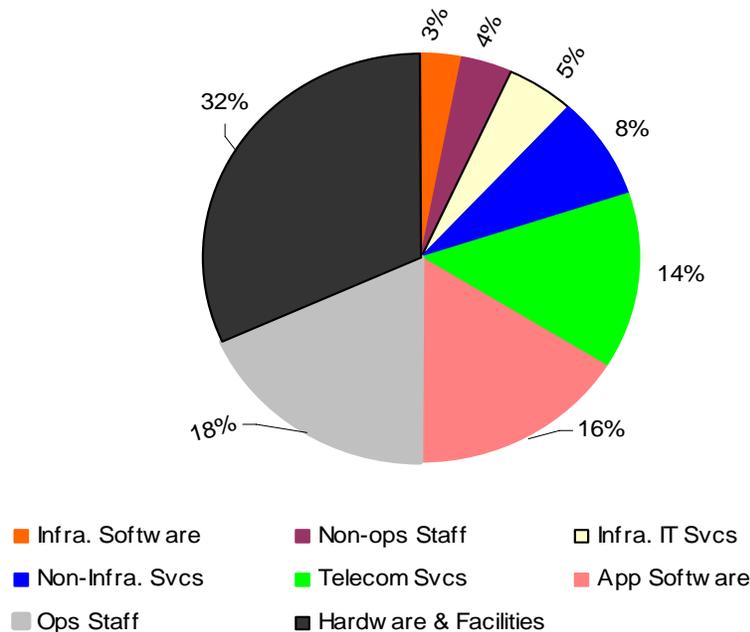
The 2003 Governor's Performance Review states that agencies spend a total of \$25 million per year on telecommunications equipment and services. The consolidation effort was supposed to save GSD approximately \$11.5 million over two years. However, cost savings data are not available to verify the accuracy of the projected savings.

***Total Cost Of Ownership Could Not Be Determined.*** According the draft e-Mail Consolidation Project Plan, consolidating multiple e-mail servers to a data center holds the promise of improving levels of service to all state employees and reducing the total cost of ownership by over 30 percent. GSD does not have data to support the current total cost of ownership or promised reductions.

Total cost of ownership includes all direct and indirect costs related to the purchase of any capital investment. It reflects not only the cost of purchase but all aspects in the further use and maintenance of the equipment, device, or system considered. This includes the costs of training support personnel and the users of the system, costs associated with failure or outage (planned and unplanned), diminished performance incidents (i.e. if users are kept waiting), costs of security breaches (in loss of reputation and recovery costs), costs of disaster preparedness and recovery, floor space, electricity, development expenses, testing infrastructure and expenses, quality assurance, incremental growth, decommissioning, and more.

According to Gartner, determining IT infrastructure and operations total cost of ownership helps focus on cost-reduction initiatives that have the largest payoff. The following chart provides benchmarks of what is included in a total cost of ownership calculation and the percentage of the total that can be allocated to each component to derive a baseline.

**Chart 3. Framework for Calculating Benchmarks for Total Cost of Ownership**



Source: Gartner

### **Recommendations.**

- Finalize the IT Consolidation Savings Plan. Move past the conceptual level to the logical and implementation levels.
- Document FY05 IT consolidation savings based on actual expenditures.
- Consider the effect on IT consolidation projects during GSD's operating budget.
- Consider agencies' (especially GSD) resources and capability to execute IT consolidation projects prior to requesting funding.
- Produce a defensible estimate of total agency costs for current IT operations and development projects based on actual expenditure data for FY04 and FY05.
- Evaluate the savings opportunities and risks for centralizing IT infrastructure services.
- Produce an accurate estimate of total state office complex and agency costs for IT infrastructure as it exists now and a comparative estimate of costs if they were consolidated into enterprise-scale data centers.
- Produce an accurate estimate of staffing levels for IT positions necessary for a consolidated IT infrastructure.
- Reassess at the highest level why IT consolidation is desirable and whether the benefits are worth all of the trouble it will create.
- Reassess the relative benefits and risks associated with consolidation projects prior to undertaking them.
- Use total cost of ownership to determine IT projects with the largest payoff.

## STATEWIDE PORTAL

The statewide portal, originally called the MAGportal (multi-agency portal) was conceived in 2000. First planned in 2001, the portal was to create a single point of entry into all state government services and information, as well as to create the underlying infrastructure to support electronic government. A statewide portal would offer one-stop shops for citizens, life events, businesses, employees and state/local governments. The project was envisioned as a three-phase, three-year project to iteratively develop and deploy an enterprise portal.

The portal essentially would allow state services to be provided in a new enhanced way, which likely would provide quantitative benefits to the state in a few years. At the time the original MAGportal was planned, government portals were a fairly recent innovation, and little hard data was available to use as benchmarks to calculate or project a specific cost benefit. The cost benefit to citizens and business interacting with state government was thought to be substantial.

An initial cost estimate and request of \$2 million was made to deploy a functional portal that met state requirements and included six to eight on-line services. The FY02 appropriation of \$700 thousand was to plan, design and begin implementation of a statewide portal that will allow citizens query capabilities about government information and services followed by transaction capabilities from a central location. The reduction required a change in strategy from a single-year implementation to a multi-year phased approach.

For phase 2 (FY03), \$1.5 million was requested, but only \$1 million was appropriated to plan, design and implement the portal. FY04 phase 3 funding was requested in the amount of \$2 million to complete implementation and cover shortfalls from FY02 and FY03 appropriation requests. The Legislature appropriated \$100 thousand to maintain the statewide portal. Total requested project appropriations totaled \$5.5 million of which only \$1.8 million was appropriated.

**The MAGportal Project As Originally Planned Was Declared A Failure.** In January 2006, the OCIO reported the project status as follows.

- Phase 3, which was full implementation, did not occur because a “proof of concept” was never established. (Note: A proof of concept, or a prototype, was established after completion of the initial project phases 1 and 2.)
- Software and licenses have expired and software is rendered obsolete.
- Project hardware was purchased and absorbed by GSD. Some were identified as surplus and donated to Katrina victims.
- MAGportal was a victim and tragedy of poor project management (that is, funding and execution).

In January 2005, as part of its report to the Legislature-Volume I, the LFC reported MAGportal as a \$2 million failure.

Original project infrastructure used commercial off-the-shelf software and industry standard protocol for authentication and authorization services. The hardware and software purchased were consistent with best known practices at the time. Three primary vendors were used: Oblix (security and single sign on), IBM Websphere (portal server) and Vignette (content management

software). Phase 1 tasks were reported as complete in August 2002.

- The essential e-government infrastructure had been created.
- A set of tools to build and manage the portal had been implemented.
- The portal presentation layer had been created.
- Software to support on-line applications, publish content, and portal usage reports was installed.
- Structure for organizing and publishing content organized around user roles and areas of interest had been created.

The following table shows phase 2 scope of work items. The current status, if known, is also shown.

**Table 17. Phase 2 Scope of Work Completion Status**

Item	Status
Enhancing the portal infrastructure	Unknown
Revising the information architecture based on initial user testing	No
Creating a production environment	No
Paying balance due for software licenses (phase 1 funding required a portion of the development and production licenses to be deferred until phase 2)	Yes
Purchasing new licenses and software	No
Creating a plan to acquire online services	No
Hiring a day-to-day project manager	Yes
Obtaining IV&V services	No

Source: Status Report to the IT Commission Dated 2/11/04

Staff training is conspicuously absent from both phases. Phases 1 and 2 produced a working prototype, developed by contractors, which could be used to move into production at the planned launch date of December 2003. A functional portal was never launched.

In September 2002, LFC staff voiced concerns, including the following:

- Who will be responsible for hosting the MAGportal production servers? What is the cost to host these servers? How will these costs be charged back to various agencies? How will costs to host servers be communicated to agencies?
- Who will be responsible for managing security, including authentication and authorization services and monitoring for unauthorized access attempts?
- What is the vision for identity management to enable single sign-on to multiple state web applications as well as legacy applications?
- How are deliverables for the project being defined and measured for success?
- What is the biggest risk that could cause this project to fail? What is being done to mitigate this risk?

Most of these concerns were not addressed in a timely manner or at all.

A variety of portal funding options was considered and, at the time, a self-funded model appeared to be the most viable. A self-funded model requires minimal general fund revenue because the portal integrator funds all capital outlay and operational costs. Fees are charged for a

small number of applications to sustain the e-government environment, but a large proportion of the information provided is free to the public. Fees established by statute to conduct e-business can repay any general fund investment many times over. OCIO staff rejected a fully appropriated model (which relies totally on general fund appropriations). The fee-based model (where portal users are charged a convenience fee to access on-line services or information) was rejected because of the financial condition of many New Mexicans.

The OCIO drafted legislation regarding the legal and privacy issues of selling state-owned electronic data, which was introduced during the 2004 legislative session (HB291), but did not pass. The bill would have

- Created an electronic government act
- Granted electronic government oversight and governance power and duties to the IT Commission,
- Established a fee structure,
- Required that money collected from providing data records, services or information through the state's portal be distributed to the general fund, unless otherwise provided by law, and
- Authorized the governor to designate a state agency as the lead agency for state electronic government activities.

Issues raised by committee staff included the following items related to portal governance.

- Funding was not provided for the lead agency.
- The state lacks a working document that specifically outlines the desired functionality, the underlying data sources (and agency participation) and associated costs and benefits of an infrastructure for electronic government.

The commercial sale of constituent data proved to be controversial. During the legislative session, the New Mexico Press Association and the New Mexico Foundation for Open Government opposed the e-government portal measure. One of their main objections was to a proposed "tier pricing" system that would allow for different fees, depending on the user and the purpose for which the user wants the public records. The highest fees would have been imposed on commercial users that access records and then sell a product using the information. Critics contended the state was trying to turn publicly owned records and information into a profit-making venture.

Subsequently, the MAGportal project was put on hold due to lack of an agreement on the strategy. With no governance structure for the statewide portal in place, in April 2004 committee staff added the MAGportal project to a watch list. By January 2005, MAGportal was considered a failure.

**Consistent Portal Governance Structure Needs To Be Established.** A governance structure must be developed irrespective of funding or hosting method chosen. Laws 2003, Chapter 76, Section 7, Subsection 3 required that a governing organization be formed to clarify decision-making authority and responsibilities to enable the portal to operate as an enterprise system. A governing organization was not established.

Laws 2004, Chapter 114, Section 8, Subsection 10 designated GSD as the lead agency with TRD serving as a co-sponsor. Laws 2004 also directed that an e-government governance and management structure shall be established to provide oversight, fiscal monitoring, strategic planning and policy development for the state's e-government initiatives. The project team was to publish a vision and a strategic plan for e-government based on a self-funded model to various oversight committees by September 1, 2004. The OCIO received a \$150 thousand appropriation for this purpose. A vision and strategic plan was not submitted by the statutory deadline.

According to a draft MAGportal white paper written by TRD's former CIO and published in August 2004, when the governance structure is solid, outsourcing is a more practical option. However, a governance structure must be created to focus on issues relating to data availability, sales, fees, interagency linkages, legislation and priorities for portal development. If constituent data is to be presented, a common basic infrastructure must exist to secure the data and to authenticate users requesting access.

The white paper recommended refocusing the portal on the value of providing constituent services, while developing a governance structure in parallel, thereby developing critical skills in-house. Until the state's technical, procedural and policy-based infrastructure is in place, the system should be simple and present static, low-risk, informational data.

**The e-Government Strategic Plan Needs To Be Finalized.** Laws 2004, Chapter 114 mandated publication of a vision and a strategic plan based on a self-funded model by September 1, 2004. The September 1 deadline was a contingency of the appropriation to allow time for the completion of the statewide IT architecture and consolidation. The deadline also allowed time for public discussion and development of proposed legislation to implement e-government services. The intended outcome of the plan was to document a business case that considers a self-funded model (initial costs paid for by a contract vendor in exchange for ongoing transaction fees) versus a general fund appropriation. The OCIO agreed to move forward with plan development according to legislative direction.

On October 26, 2004, the OCIO entered into a professional services contract not to exceed \$35.2 thousand. The contractor was to write the plan and an accompanying presentation by November 30, 2004, and to finalize the plan and write an accompanying presentation by December 30, 2004. The **draft** plan, revision 4.1 was published January 20, 2005.

The plan identified three focus areas.

- Government-to-constituent and government-to-business
- Government-to-government
- Government-to-employee and internal operations

The plan also described various surveys conducted by the contractor: agency, business and constituent.

***A Low Response Rate Limits The Usefulness Of The OCIO Survey.*** The OCIO Based Agency Survey Results On A 14 Percent Response Rate, Thus Limiting The Usefulness of The Results. The response rate was eight percent if only responding agencies are considered, rather than online services and transactions. The agency survey was conducted by sending over 300 notices

through the state e-mail system inviting state departments, divisions, bureaus, commissions and councils to participate. The online survey was made accessible through a posting on the state OCIO website. Agencies had about a month to respond. Forty-two valid responses were received representing 25 state agencies. The agency survey was designed to allow a state agency to identify multiple online services and/or transactions. Each identified service or transaction was individually counted as one survey response.

The survey included a technology section to gather information about the web and e-government technologies that have been purchased and are in use today. Information was received on web servers, browsers, application servers, scripting languages and sign-on and authentication. The OCIO pointed out that categorizing information by topic may be necessary to redesign the state website as a portal and to create sub-portals, which will focus on specific user groups and provide value-added services of interest to particular audience or population. Categorizing information topically is a clear requirement of effective portal design.

The response rate could not be calculated on business survey results because the number of invitations issued was not disclosed. The constituent survey was conducted in conjunction with the business survey. An organized list of constituent stakeholders was not developed due to time constraints.

***The Draft Plan Did Not Establish A Governance Structure.*** It did not identify individuals or required skill sets, timelines or implementation dates. It is essentially “a plan for a plan” that established a theoretical governance structure only at the highest level.

***The OCIO Did Not Follow Legislative Direction To Plan Based On A Self-Funded Model.*** Instead, the funding model proposed a combination of public/private partnership, state in-kind services, grants, one-time donated equipment and services and implementation on online service fees.

**Adequate Investment In Critical Skills Is Necessary To Operate And Manage The Portal.**

Laws 2003, Chapter 76, Section 7 states that agencies shall volunteer resources to demonstrate capabilities for integrating the portal with current web development projects. GSD dedicated one FTE to the project for a while. Even if other agencies volunteered resources, funding was not included for training.

With the portal infrastructure in place, the state had the tools to do publishing and content management but not the expertise to understand how to integrate and manage the information and workflows required to optimize the e-government experience for constituents. A directory product was in place, but the internal model or standards to use it were not adopted. The state invested in security software, but did not have the internal structures defined to truly implement it. The state did not have the skills to use many of the tools they had.

Whether or not the portal is developed in-house or out-sourced, basic skills must exist, and they must be owned by the state. Without adequate skills, correct policy decisions cannot be made on data integration and access, security and design. Outsourcing will not absolve state agencies of their responsibilities and statutory obligations to understand, to protect and to manage constituent

data. Resources must be dedicated to making internal state systems portal-ready and to establishing and enforcing policy.

According to the white paper cited above, many elements involved in providing services and data integration capabilities, such as presentation, personalization, collaboration, process, search capabilities and data categorization were not analyzed, designed and delivered with the MAGportal. Although samples and examples can be delivered by a vendor, the state must take ownership of those skills and elements to manage effective service delivery to clients. The elements directly affect the customer experience.

**Work Towards Establishing Essential Portal Standards.** Policies and standards essential to maintaining a robust statewide portal were not finalized or initiated. In 2003 the Standards Committee prepared three portal standards for review by portal steering committee, the OCIO and the IT Commission for final approval. They included domain name, linking and intellectual property.

- The domain name standard identified GSD as the domain name registrar and provided guidance to a government entity wanting a domain name, to GSD Office of Client Services who would register and manage the states domain names and the OCIO and the IT Commission chairman, who had final authority to decide disputed domain names.
- The linking policy provided guidance to government entities wanting to link to the portal or to have a link from the portal. It also provided GSD the authority to manage and oversee the linking to and from the portal.
- The intellectual property use policy provided guidance with respect to properly identifying the ownership of and conditions for use of third party materials. It identified the IT Commission as the body that would establish policies and procedures and GSD as the entity that will enforce the policies and procedures since it was the portal provider.

The standards committee also reviewed best practices from another state with a well-developed portal, studied that state's policies and standards, and compared them to all existing New Mexico IT policies or standards in final or draft form, as well as procurement rules or laws to which agencies could look for guidance. Gaps were identified and the information was also forwarded to the portal steering committee.

The original project plan identified one possible barrier to successful implementation as the use of standards. The plan stated that developing the portal as envisioned in the preliminary architecture would require a significant investment in time and resources. During this time, state agencies would continue to develop systems to ultimately interface with the portal. To resolve any conflict among these activities, portal development and infrastructure standards were necessary to provide guidance to state agencies making the transition from silo systems to an integrated statewide portal.

**Appropriated Funds Were Expended For Purposes Other Than Intended.** Expenditure of the FY04 appropriation of \$150 thousand for statewide portal project purposes could not be documented. The FY05 OCIO independent audit showed that \$134.5 thousand of the appropriation had been expended. OCIO documentation only supported \$35.2 thousand of contractual costs. The remaining balance of \$99.3 thousand was spent for other-than-intended purposes such as redesigning the State of New Mexico website and developing a state-owned

search engine that can crawl and cache online state resources. These activities do not constitute “continuing implementation” of a statewide portal. The audit reported that implementation of both activities was expected in fall 2005.

Audits of Governmental Entities, 2 2.2 NMAC, requires that specific appropriations be accounted for separately. This is a special requirement of the State Auditor.

**Portal Project Accounting Contains Discrepancies.** Based on the FY04 independent audit of the OCIO, MAGportal funds totaling \$378.3 thousand were transferred to DFA. However, the OCIO only had available funds of \$305 thousand - (\$60) thousand carryover from FY02, \$120 thousand carryover from FY03, plus FY04 appropriations of \$245 thousand. If correct, the FY04 transfer to DFA resulted in a cumulative over reversion of \$172 thousand.

Expenditures and reversions for MAGportal cannot be accounted for because of poor accounting records at the OCIO. Table 1 at Appendix H shows portal appropriations, expenditures and transfers. Table 2 at Appendix H shows that, if the FY04 transfer to DFA is in error and did not include portal funding and if that transaction is removed from consideration, then the OCIO cannot account for \$206.3 thousand of project funding.

Other discrepancies were also noted in the records reviewed.

**Table 18. Other Discrepancies**

<b>Date</b>	<b>Report</b>	<b>Status</b>
September 1, 2002	FY04 budget request	Total phase 1 costs were \$700 thousand, as opposed to the \$760 thousand shown above
December 10, 2003	Status report to OCIO	FY02 and FY03 expenditures and encumbrances \$1.73 million
January 20, 2005	Draft e-Government Strategic Plan	Expenditures \$1.64 million comprised of \$760 thousand in FY02 and \$880 in FY03.
January 2006	OCIO funding summary	FY03 appropriation as \$1.5 million when the actual appropriation was \$1 million

Source: LFC Files

**Recommendations:**

- Leverage conceptual work already done and lessons learned from this defunct project prior to requesting any funding for future portal development.
- Finalize the e-Government Strategic Plan, including appropriate architecture, system security, infrastructure, etc. needed for e-government implementation.
- Prepare the business case using various funding models. Success is determined by how well the portal is planned—and later, by the extent to which it is used.
- Expend appropriations only for legislatively intended purposes and account for and report specific appropriations separately, as required by the State Auditor.
- See Appendix H for more detailed recommendations.

## DEPARTMENT RESPONSES

BILL RICHARDSON  
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November 15, 2005

David Abbey, Director  
Legislative Finance Committee  
325 Don Gaspar, Suite 101  
Santa Fe, NM 87501

Dear Mr. Abbey:

From the beginning of your committee's "Review of Consolidation Project and ISD/CD Functions" the General Services Department (GSD) and the Office of the Chief Information Officer (OCIO) made a commitment to do everything possible to assist your performance audit team in producing a quality product. We believe that by working closely with your performance audit team that this objective has been accomplished successfully.

GSD and the OCIO have reviewed the audit report and recognize that there are challenges and opportunities for improvements towards achieving the objectives of IT consolidation as specified in Executive Order 2004-014 statewide and at the agency level. With this letter we present a unified response to the findings and recommendations cited in the performance review report of "Statewide IT Consolidation Initiatives."

We are committed to advancing the objectives IT Consolidation by working with state agencies to address the challenges through effective planning and execution of proven best practices. Similarly, the office through a collaborative effort with the enterprise agency, other state entities, and the Governor's office plans to seize the opportunities to accomplish the objectives of IT consolidation within the State of New Mexico.

We appreciated the professionalism, fairness and diligence of your performance audit team. We would look forward to any further opportunities to work again together to improve government operations and services.

Sincerely,

Arturo L. Jaramillo  
Cabinet Secretary  
General Services Department

Roy Soto  
State Chief Information Officer

cc: John J. Martinez, Director, Communications Division, GSD  
Karen Baltzley, Chief Information Officer, GSD  
Tom Romero, Deputy Cabinet Secretary, GSD  
Aurora B. Sánchez, Senior IT Performance Auditor, Legislative Finance Committee  
Susan Fleischmann, Performance Auditor, Legislative Finance Committee

## **TELECOMMUNICATIONS CONSOLIDATION**

GSD and the OCIO believe that the state is authorized to operate a self provisioning telecommunications operation for executive agencies under its existing statute. Laws 2001, Chapter 64, Section 8 and Laws of 2004, Chapter 114, Section 8, Subsection 11 provided funding for exactly this purpose.

GSD/ISD rates and methodology were approved by the ITC in August 2006. GSD/CD rates are set to be completed December 2006 consistent with the approved GSD/ISD methodology.

The ITC correctly approved with the release the \$2.M, with consent from DFA, LFC & GSD after responses to questions were provided and accepted.

We disagree the \$4.8 M appropriation picks up the contingency from the previous \$2m appropriation.

IV&V was specifically disallowed under the \$2.M appropriation. Conversely, IV&V will be performed on the rollout of the Southeast quadrant. An approved IV&V template is in place to address this requirement.

## **IT STAFF CONSOLIDATION**

ISD is filling vacancies to improve service and reduce the risk of downtime.

The Executive Board (EB) is in place to address exceptions to consolidate agency IT staff. The OCIO will work with SPO to update the TOOL numbers of IT positions approved as reclassifications out of IT. Also an acceptable alternative is in place for CIO to control IT budgets for large and mid-size agencies. The agency CIO approves all IT expenditures, and IT budgets reside in programmatic areas to prevent the loss of funds especially from the federal level.

We believe the report understates the actual number of years of IT professional experience credited to the Director of the Communications Division and the GSD CIO.

## **DATA CENTER CONSOLIDATION**

ISD is requesting \$6 million for data center physical infrastructure improvements through the Property Control Division. Phase I is in progress right now at a cost of \$1.2 million.

In October ISD hired a physical plant manager to manage power and HVAC in the cold room.

The following statements clarify the status of the physical infrastructure of the data center.

- Simms Bldg can pull backup water supply from either the Montoya or Runnels Bldg. If domestic (city) water supply is cut off, pumper trucks are brought in for supply.

- Data Center layout does support hot and cold aisle air distribution. Progress is being made to clear areas that are blocking more efficient air flow (pulling old cabling form under raised floor, installing blanking plates in vacant rack space, etc) Phase I will re-construct overhead ducting for maximum distribution.
- Noxious air inside the Simms Bldg issue is being corrected in PHASE I Data Center upgrade project. Fumes are noticeable when diesel generators are being tested once per week after normal working hours.
- Generators will be replaced in Data Center upgrade project. Generators are regularly tested once per week for 30 minutes at normal load.
- All racks do have dual power cable feed with the exception of one row. Data Center Upgrade Project will install PDU's at the end of each row.
- Racks are being consolidated to maximize on air distribution and material under raised floor has been removed which has significantly increased capacity.
- The OCIO conducted surveys to obtain information, agencies self-reported data. The Bridgers & Paxton Load Study from June 2006 indicates current capacity load requirements based on 1) current rack configuration and quantity, 2) current rack quantity @80% fill and 3) capacity required to support an additional 88 racks @50% fill.

It is not in the best interest of consolidation initiatives to migrate hardware to central locations but rather migrate applications and databases to existing or planned Enterprise platforms that are scaled to meet business needs. "Grow to meet demand".

GSD currently has the following storage capacity with unallocated/unused capacity to accommodate growth. A baseline study is currently being defined and will be performed over the course of the next month.

24TB – NexSAN, 45TB – EMC Clarion (Email), 6TB – HP, 3.5TB – EMC Symetric, 18TB, StorageTek, 18TB – Hitachi, 43Petabytes – Tape Library.

GSD is requesting funding to conduct a statewide assessment on all known Agency storage devices to determine how much unused capacity exists and how data is being stored with the goal of better utilization of capacity, classifying and managing data storage to reflect the correct storage tier required to protect state assets.

As of this date, 90% of Email SLA's have been signed. The ISD SLA does offer monetary remedy if service level availability guarantees are not met, performance metrics and dispute resolution are also stated. Funding has been requested in FY08 to support implementing end-to-end robust Enterprise performance monitoring and management tools.

The Department acknowledges the impact of the early implementation of the restructured ISD rates for FY08 in FY07 and will be working with DFA and LFC to seek resolution and mitigate this impact on affected agencies.

The Department believes that a better potential solution is to allow greater flexibility in agency BAR authority for GSD services. This encourages accountability on both sides. It also better accommodates the potential impact of new rates for new services in FY07. An example is the operations cost for SHARE; DFA and GSD/ISD are currently developing estimates of the cost of operating the state's new enterprise resource planning system. Recognizing the total cost of ownership of this system is likely to produce a far higher cost than the avoided mainframe costs for DFA and ISD's HRMS system.

OCIO/GSD disagree with the recommendation to halt the migration of individual servers. Server migration is handled on a case by case basis.

### **EMAIL CONSOLIDATION**

All records reporting email costs are available and recorded. Audited cost of the project was \$982,608.

Costs were increased by entering into capital leases for the equipment. ISD is recommending an early buy out the leases and will request appropriate funding to do so in FY09.

Capacity Management Plan has been developed and implemented. OCIO has directed Agencies to work with GSD to deploy Outlook 2003 in a planned manner and load balancing has been improved through Agency increasing their IP Address pools to GSD.

The use of \$2.17 per e-mail box as reported by the agencies to make comparison is an unaudited number and is not comparable.

Outlook 2003 deployment/Inventory - GSD has developed an internal inventory tool to gather this information and is applying it capacity management and agency deployment.

User authentication and authorization - GSD has requested funds to conduct a statewide assessment and develop a plan for the purpose of design and implementation of a statewide directory and identity management services architecture that will support all enterprise applications and agency infrastructures.

Trusted network - GSD has requested funding to conduct an assessment and plan to design and implement a "trusted network".

E-mail equipment replacement plan - ISD is currently working with MS and storage vendor to define design upgrade and equipment replacement needs.

### **ENTERPRISE AND AGENCY-LEVEL SECURITY**

The OCIO has established a working security domain team and the ITC has published a number of security architectural configuration requirements (ACRs) which are administrative rules that agencies are required to follow.

S-STD-012.001 calls for an Information Protection Center. Presently security incidents are reported to the state Cyber Security and Privacy Officer.

Agencies Security and Disaster Recovery Plans are requirements of their FY08 IT Plans.

The OCIO has established Security points of contacts in each executive agency to respond to security incidents. Also, funding for assessment and training was requested FY08.

The state has in place an enterprise information architecture Security framework approved by ITC. Also, the ITC held a security forum in 2005.

The OCIO requested \$150.0 to conduct security assessment and training in the OCIO FY08 budget. Agency-specific security plans are required components of the FY08 IT Plans.

Project security is one of the critical elements reviewed by the OCIO, PCC, ITC as part of Certification process.

All IT contracts including security review is part of the OCIO on-going contract review processes.

### **CONSOLIDATION SAVINGS**

The IT Consolidation project reported unaudited savings of \$19,091,000 from IT Consolidation activities in FY05.

### **STATEWIDE PORTAL**

The OCIO also reported the MAGPORTAL project as a failure.

The State CIO presented the e-government study and findings to LFC. The presentation included discussion of the Governance structure recommendation as presented in the e-government study. The study examined various forms of financial support for e-government, including, self-funded models.

The study was a result of many types of research including, but not limited to, Qualitative surveys of citizens, employees, and public entities, Best practices in e-government through out the country, and Stakeholder meetings. The study resulted in both long range and short term recommendations.

The study recommended a design simplification of the State's homepage in order to help facilitate e-government-completed.

The study recommended the utilization of a Search engine dedicated to State web content-completed.

**Table 1. States with Physical and Application Consolidation**

State	Physical Consolidation
Alabama	Data center - incremental build out
Alaska	Data center, servers
Delaware	e-mail, payroll, personnel and accounting, courts
Florida	Data center
Georgia	e-mail, data center, payroll, personnel, purchasing, law enforcement, child support enforcement, payments to retirees
Idaho	Telecommunications
Louisiana	Data center, e-mail
Maryland	e-mail servers, telecommunications network
Massachusetts	Payroll, licensing, state health insurance and data storage
Michigan	Data center to manage storage and network information
Minnesota	Data center
Mississippi	Data center
Missouri	Data center
Montana	Data center, servers
Nevada	Servers, networks
New Hampshire	Software platforms, networking, desktop services
New Mexico <sup>(1)</sup>	Data center, servers, networks, e-mail, telecommunications, storage, mainframes (future), payroll, personnel, accounting, licensing, statewide portal including fee payment
New York	Data center, servers, networks, payroll, personnel, accounting
North Carolina	Mainframe operations, networks, payroll, expenditures, e-mail, identify and access management
North Dakota	e-mail, database and application servers
Ohio	Human resources and accounting, e-mail
Oregon	Data center, mainframes, servers, networks
Pennsylvania	e-mail servers, telecommunications, statewide data center
Rhode Island	e-mail servers
South Carolina	Data center
Tennessee	Networks (including telecommunications), statewide portal (driver's license renewal, felony offender lookup, unclaimed property search)
Texas	Data center, enterprise applications
Vermont	All IT systems
Virginia	Licensing, issuing grants, collecting fees and debts, retail sales
Washington	Data center
West Virginia	Data center
Wisconsin	e-mail servers
Wyoming	Infrastructure and networks, statewide portal

Source: NGA Issue Brief 12/20/05

(1) New Mexico added for comparative purposes.

**Table 1. Wire New Mexico Projects- Phases 2 and 3**  
(in thousands)

Phase	Project	Cost
2	Rio Grande corridor fiber from El Paso to Santa Fe, a partnership between GSD, New Mexico State University and New Mexico Institute of Mining and Technology	\$2,000.0
3	Santa Fe, Albuquerque and rural city metropolitan area networks (digital microwave) connect state facilities to the fiber backbone. (Only Santa Fe complete)	\$1,000.0
3	Upgrade to the core network at the Simms Building (operating budget)	\$10.0
3	Continued build out of digital microwave and connection to the fiber backbone	\$6,309.7
3	Southeast New Mexico fiber from El Paso to Clovis and back to Albuquerque, completing the fiber ring	\$4,800.0
<b>Total</b>		<b>\$14,119.7</b>

Source: Telecommunications Architecture Plan 2006

**Table 2. MAGnet/Wire New Mexico Special Appropriations**  
**Fiscal Years 2002 through 2007**  
(in thousands)

Laws	General Fund	Expenditures	Available
Laws 2001, Chapter 64, Section 8, Subsection 7 To provide a single statewide, centralized telecommunication backbone for state government based on asynchronous transfer mode technology (ATM). Use the state-owned digital microwave telecommunication system to enhance statewide telecommunications and leverage state-owned resources without incurring additional costs. <sup>(1)</sup>	\$1,500.0	\$1,500.0	\$0.0
Laws 2002, Chapter 4, Section 7, Subsection 7 Same purpose as the previous year plus a statewide architecture plan to continue the aggregation of data circuits.	\$1,000.0	\$990.1	\$9.9
Laws 2003, Chapter 76, Section 7, Subsection 2 To continue the implementation of a single statewide, centralized telecommunication backbone for state government based on asynchronous transfer mode technology.	\$1,200.0	\$1,200.0	\$0.0
Laws 2004, Chapter 114, Section 8, Subsection 11 To continue implementation of a single statewide, integrated telecommunications backbone for state government. Funding is contingent on a telecommunications architecture plan, including cost and savings analysis and OCIO approval. Use of the funds was limited to equipment and software in accordance with the telecommunication architecture plan.	\$2,000.0	\$1,553.4	\$446.6
Laws 2005, Chapter 33, Section 7, Subsection 7	Reauthorized appropriation from Laws 2004, Chapter 114, Section 8, Subsection 11		
Laws 2006, Chapter 109, Section 7, Subsection 6 Reauthorizes funding from Laws 2004, Chapter 114, Section 8, Subsection 11 appropriation, which was also reauthorized by Laws 2005. To continue telecommunication infrastructure in the southeast quadrant of New Mexico with sufficient bandwidth capacity for distance education, telehealth services and corrections. (Full language below.)	\$4,800.0		\$4,800.0
<b>Total</b>	<b>\$10,500.0</b>	<b>\$5,243.5</b>	<b>\$5,256.5</b>

Source: CIO and LFC Files

(1) Laws 2001 appropriated \$3,671.6 thousand, which included \$2,171.6 from the Road Fund. DOT did not transfer the Road Fund portion.

## **Laws 2006, Chapter 109, Section 7, Subsection 6 MAGnet/Wire New Mexico Appropriation**

(\$4,800,000 General Fund Appropriation) To continue the telecommunication infrastructure in the southeast quadrant of New Mexico. The bandwidth shall be of sufficient capacity to accommodate distance education, telehealth services and corrections department needs. The period of time for expending the two million dollars (\$2,000,000) appropriated from the computer systems enhancement fund contained in Subsection 11 of Section 8 of Chapter 114 of Laws 2004 as extended by Subsection 7 of Section 7 of Chapter 33 of Laws 2005 for continuing implementation of a single, statewide, integrated telecommunications backbone for state government is extended through fiscal year 2007. The general service department shall serve as lead agency for this project. Funding is contingent upon submission of a telecommunications architecture plan by the general services department to the information technology commission, information technology oversight committee, legislative finance committee and the department of finance and administration. The telecommunications architecture plan shall be in accordance with the state information architecture, information technology consolidation plan, and enterprise-wide information security program and shall be approved by the state chief information officer. The telecommunication architecture plan shall include a cost and savings analysis by agency. The state-owned digital microwave telecommunication system shall be used at all possible locations to enhance statewide telecommunication and leverage state-owned resources without incurring additional costs. The general services department shall provide monthly written status reports to the chief information officer. Funds for this appropriation shall not be used to pay for independent consultant services. Funds for this appropriation shall be limited to the purchase of telecommunication circuits and related hardware and software in accordance with the telecommunications architecture plan.

**Table 3. Digital Microwave Capital Appropriations and Expenditures  
1998 through 2005**  
(in thousands)

<b>Capital Appropriation</b>	<b>Original Budget</b>	<b>Expended</b>	<b>Encumbered</b>	<b>Balance</b>
Laws 1998, Chapter 118, Section 15 To the general services department to upgrade the state's communication system to digital.	\$1,000.0	\$1,000.0	\$0.0	\$0.0
Laws 1998, Chapter 87, Section E For conversion of an initial segment of the state's radio communications system to digital services to support law enforcement officer safety and effectiveness and interconnect with the state's emergency management center and state national guard.	\$2,225.0	\$2,185.4	\$39.6	\$0.0
Laws 2000, Chapter 21, Section 10, Subsection C (\$10 million Bond Failed)	\$0.0	\$0.0	\$0.0	\$0.0
Laws 2002, Chapter 110, Section 17 To continue converting the state's microwave radio system to digital technology.	\$3,333.3	\$3,107.4	\$161.9	\$64.0
Laws 2002, Chapter 110, Section 51 To continue converting the state's microwave radio system to digital technology.	\$6,666.7	\$5,918.1	\$469.5	\$279.1
Laws 2003, Chapter 429, Section 17 To continue the development of a digital microwave communications backbone for the state.	\$2,000.0	\$1,735.9	\$200.3	\$63.8
Laws 2004, Chapter 126, Section 36, Subsection 3 To complete the upgrade of the state's analog system to a digital system to meet the federal requirements and to improve communication services statewide.	\$5,000.0	\$2,690.3	\$2,207.7	\$102.0
Laws 2005, Chapter 347, Section 40 To convert the analog microwave radio system to a digital system at sites statewide.	\$5,000.0	\$0.0	\$0.0	\$5,000.0
<b>Total</b>	<b>\$25,225.0</b>	<b>\$16,637.1</b>	<b>\$3,079.0</b>	<b>\$5,508.9</b>

Source: GSD Records



**Table 1. Status of Large-Agency Positions Vacant as of 7/1/06**

Agency	No. of IT Vacancies	Status of Vacant Positions				
		Filled	Vacant (Budget)	Frozen	To Be Filled FY07	Other
GSD-ISD & CD	53	11		10	21	6 - Pending reclassification; 4 - Not on E-1 form; 1 - Temporary position expiring on 1/16/07
TRD	23	1	10	8	4	
DOH	22	3	1		12	5 - Vacant pending federal grant award; 1 - Reclassifying to non-IT
DOT	20	2			7	1 - Reclassified to engineer; 10 - Inactive temp
HSD	17	7			9	1 - Pending Exception Committee Approval
DOL	10	1	9			
DPS	7	2	2			3 - Expired temporary position
NMCD	5	1	1		1	2 - In process of reclassification
CYFD	4	1			1	2 - Pending reorganization
<b>Total</b>	<b>161</b>	<b>29</b>	<b>23</b>	<b>18</b>	<b>55</b>	<b>36</b>

Source: State Personnel Office Table of Organizational Listings Dated 7/1/06, Agency Data

**Table 2. CIO Education and Experience**

Agency	Degree	Years of IT-Related Experience
DOL	BBA-Computer Science/Finance, MA-Management	32
DCA	None	25.75
DOT	BS Mechanical Engineering, MBA-MIS	25.3
NMCD	None	25
NMED	BS-Computer Science, BA-Business, MS Software Engineering Mgmt	22
CYFD	BS Chemistry; MBA	20
TRD	AS Computer Technology, BS Business Admin	16.8
DOH	BA English	16
HSD	BS-Mathematics, Computer Science Emphasis	14.8
OWTD	BA-Spanish, MA and PhD-Biological Anthropology	10
GSD-CD	Unknown	10
PED	BS Applied Math MS Theoretical Math	9
HED	Bachelors in Bus. Admin., MBA	8.75
GSD-ISD	None	7.8
DPS	ED.D - Administration	1.8
ALTSD	MBA	1

Source: CIO Resumes; State Personnel Office Applications

**Table 3. CIO Status, Salary, FTE Supervised and Agency FTE**

Agency	Status	Pay	Years of IT-Related Experience	FTE Supervised	Total Agency Authorized Positions
HSD	Exempt	\$98,322	14.8	73	1,912.50
TRD	Exempt	\$87,083	16.8	85	1,165.70
PED	Exempt	\$86,488	9	18	309.00
DOH	Exempt	\$86,486	16	134	4,149.75
OWTD	Exempt	\$85,519	10	3	39.00
DOT	Exempt	\$85,517	25.3	117	2,683.18
HED	Exempt	\$85,515	8.75	2	34.50
GSD-ISD	Classified	\$85,500	7.8	114	535.62
DOL	Exempt	\$84,999	32	50	646.00
NMED	Exempt	\$84,180	22	31	672.00
NMCD	Exempt	\$83,379	25	31	2,343.00
GSD-CD	Exempt	\$83,312	10	64	Included above
CYFD	Exempt	\$79,999	20	48	2,076.53
DPS	Exempt	\$78,000	1.8	36	1,370.36
ALTSD	Classified	\$76,685	1	6	281.20
DCA	Classified	\$64,763	25.75	18	579.90

Source: State Personnel Office Table of Organizational Listings Dated 7/1/06

**Table 4. CIO Reporting Structure**

Agency	Reporting Level
ALTSD	Secretary
NMCD	Deputy Secretary of Administration
CYFD	Deputy Secretary
DCA	Secretary
DOH	Secretary
DOL	Secretary
DOT	Deputy Secretary of Business Support
DPS	Deputy Secretary of Administration
NMED	Deputy Secretary
GSD-ISD	Secretary
GSD-CD	Secretary
HED	Secretary
HSD	Deputy Secretary of Finance
OWTD	Executive Director of OWTD
PED	Secretary
TRD	Secretary

Source: Agency Files

**Table 5. IT Staff Consolidation**

<b>Agency</b>	<b>Status</b>
ALTSD	Not completely. Six IT positions are in Information Systems and one IT position is in Finance and Administration, Administrative Support.
NMCD	Not completely. 31 positions are in IT and one IT Tech Support1 position in the Penitentiary of NM Warden's Office.
CYFD	Not completely. One IT Apps Dev 2 is in protective services; will eventually move to CIO.
DCA	Yes.
DOH	Not completely. One IT Database Admin 2 is in the Scientific Lab, CTAR CHEM Terrorism Response.
DOL	Yes. CIO is deputy secretary in charge of ASD and IT.
DOT	Not completely. Out of a total of 118 IT positions, 22 are student/intern/temp, 1 Gen I-IT position is in financial management - finance and accounting, and 95 are in IT.
DPS	No. The majority of the positions are in the IT program, 3 are in Technical Emergency Bureau, 1 in State Police and 2 in Motor Transportation.
NMED	Yes.
GSD-ISD	No. The majority of the positions are in ISD, 1 in the Secretary's office, 4 in ASD and 3 in SPD. Appears to have 2 directors.
GSD-CD	Yes.
HED	Unclear. According to the 7-1-06 TOOL, the Office of the CIO include the CIO and an IT Generalist 2. An IT Apps Dev 3 is included in a bureau "not on agency/org table."
HSD	No. Most positions are in ASD, 3 in the Secretary's office and 3 in Child Support. The IT total of 74 includes 6 computer operators in production control.
OWTD	Yes.
PED	Yes.
TRD	Yes.

Source: State Personnel Office Table of Organizational Listings Dated 7/1/06

**Table 1. Summary of Estimated Load vs. Capacity of GSD Data Center Air Distribution Systems**

Description	Current Load	Current Capacity	Current Margin
Data Center Cooling Load (tons)	54.7	41.6	-13.1
Basement Telecommunications Room Load (tons)	10	10	0
First Floor Telecommunications Load (tons)	5	5	0
<b>Total</b>	<b>74.7</b>	<b>61.6</b>	<b>-13.1</b>

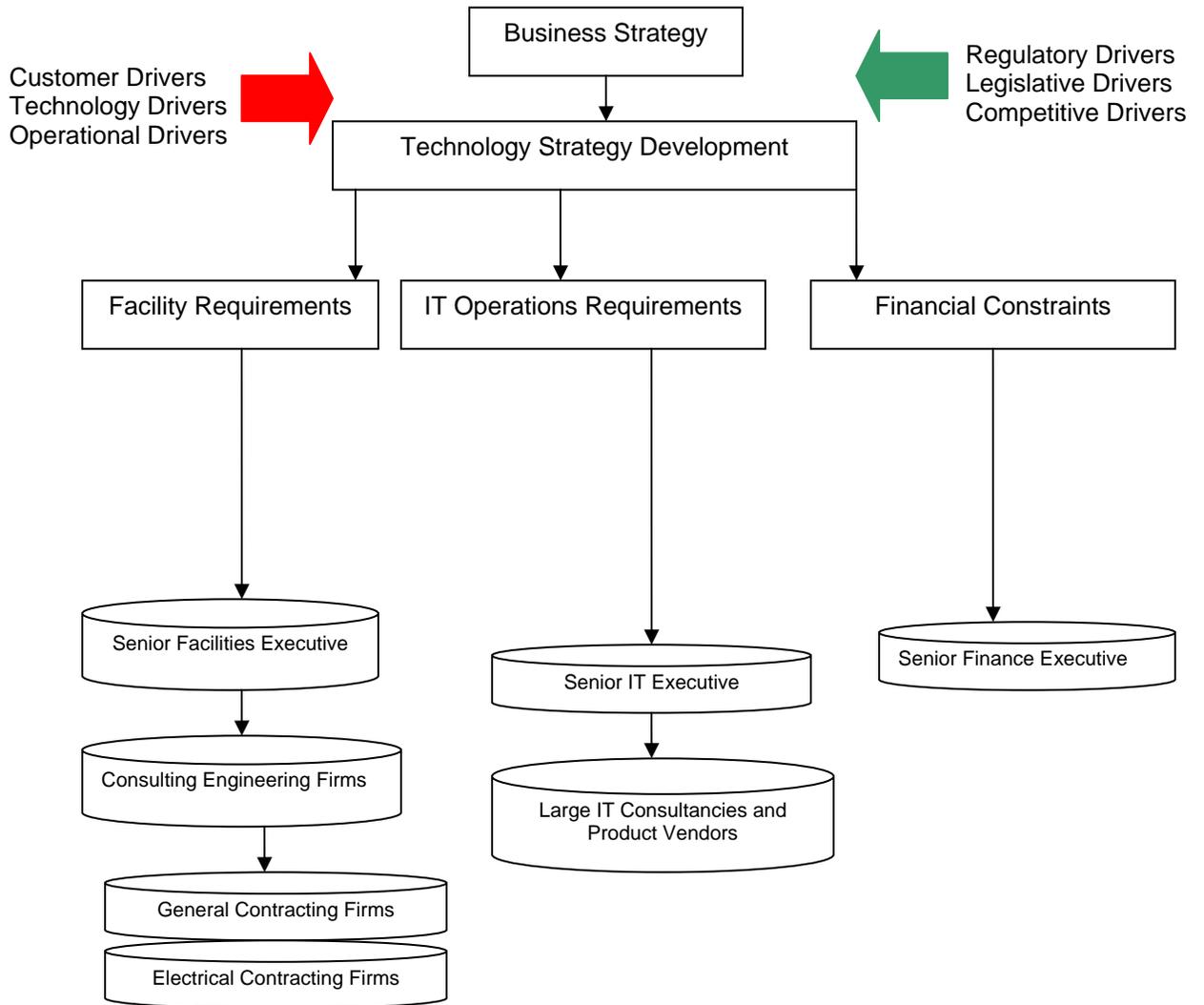
Source: GSD Data Center Assessment Report

**Table 2. GSD Data Center Upgrades**

Upgrades/Phase	Cost
Phase I <ul style="list-style-type: none"> <li>• Replace and add uninterruptible power supplies (UPS)</li> <li>• Increase cooling capacity</li> <li>• Install new power distribution units</li> <li>• Seal the floor</li> </ul>	\$2,370,855
Phase II <ul style="list-style-type: none"> <li>• Add a fourth UPS</li> <li>• Increase cooling capacity</li> <li>• Replace generator</li> <li>• Additional electrical upgrades</li> <li>• Replace the raised floor</li> </ul>	\$2,471,236
Phase III <ul style="list-style-type: none"> <li>• Replace two generators</li> <li>• Replace automatic transfer switch</li> <li>• Add a third chiller</li> <li>• Replace switch gear</li> </ul>	\$2,398,072
<b>Total</b>	<b>\$7,240,163</b>

Source: Simms Computer Building Facility Planning Report

**Figure 1. Data Center Planning Approach**



Source: APC Corporation

**Table 1. E-mail Contracts or Price Agreements**  
(in thousands)

Purpose	Amount
Establish 20,000 mailboxes; develop and deploy Outlook Web access, develop operations framework, informal and unstructured knowledge transfer, assist GSD with user training information and materials, assist GSD with additional migrations.	\$1,333.0
Sybari: antigen for Exchange licenses for 20,000 users, enterprise manager license, advanced spam manager, anti-virus, premium technical support (24x7)	\$107.3
Sybari annual renewal for five years	\$336.0
Hardware: Servers and Storage Area Network (lease)	\$2,070.0
Additional hardware (purchase)	38.9
User Online Training	\$70.0
Support for 16,860 user licenses	\$2,543.0
Technical Support: architect, install Microsoft Operations Manager, stabilize environment, guide Blackberry project; build operations framework for enterprise e-mail.	\$205.0
Independent validation and verification	\$55.7
Other	\$78.9
<b>Total All Known Contracts</b>	<b>\$6,837.8</b>

Source: Compilation of Available GSD Records

**Table 2. e-Mail Server Environment  
Recommended and Actual Configuration**

Production Environment	Microsoft Recommendation	GSD Installation
Public Folders	1	1
Front-end and Internet	7	7
Microsoft Identity	1	6
Active Directory	3	3
Mailbox	5	5
<b>Lab Environment</b>		
Front-end and Internet	4	4
Microsoft Identity	1	1
Active Directory	2	2
Mailbox	2	2

Source: Exchange Hardware Recommendation 2003 and GSD

**Table 3. e-Mail Feature Comparison Outlook 2003 to Outlook Web Access**

Interface	Outlook 2003 (Agency option- full client)	OWA Premium IE 6.0 & above	OWA BASIC (Agency option-any browser below IE 6.0.)
Research Library Task Pane	X		
Reading Layout Mode	X	X	
Outlook Today	X		
Local Folders	X		
Reminder Window	X	X	
Customizable toolbars	X		
Help	X	X	X
Navigation Pane	X	X	X
Shortcuts	X		
View contacts by follow-up flag	X	X	
<b>Messaging</b>			
<b>Read messages</b>			
Auto Preview	X		
Folder hierarchy in Navigation Pane	X	X	
Favorite Folders in Navigation Pane	X		
Navigate hyperlinks in messages	X	X	X
Attachments can be opened from Reading/Preview Pane	X	X	
Appointment accept/decline functionality in Preview/Reading Pane	X		
Unlimited number of messages displayed in mail view	X		
Get address properties from Reading pane	X	X	
<b>Send messages</b>			
AutoAddress/AutoName	X		
Insert hyperlinks in message text	X	X	
Information bar available in preview/reading pane	X	X	
Send/receive attachments	X	X	X
Embed documents in messages	X		
Word as Email Editor (Wordmail)	X		
Request read or delivery receipt	X	X	X
Spell checking	X	X	
Background/AutoCorrect spelling	X		
Add words to spell check dictionaries	X		
Recall Message	X		
Auto-select Message encoding	X		
Send mail message with Voting buttons(autoVote)	X		
Track delivery and read receipts with original message	X		
Create messages from Address Book	X	X	
Receive HTML mail	X	X	X
HTML editing	X	X	
Plain text editing	X		X
RTF editing	X		
Automatic formatting of messages with color based on criteria	X		
Auto Text	X		
Automatic text corrections (WordMail)	X		
AutoSignature	X	X	X
Insert signature on demand	X	X	
Multiple signatures	X		
Include vCard in signature	X		
Set message importance	X	X	X

**Table 3. e-Mail Feature Comparison Outlook 2003 to Outlook Web Access**

Interface	Outlook 2003 (Agency option- full client)	OWA Premium IE 6.0 & above	OWA BASIC (Agency option-any browser below IE 6.0.)
Message sensitivity	X	X	
Message expiration	X		
Deferred delivery (with or without rules)	X		
Message templates	X		
Default font for new messages	X	X	
Default font for replies and forwards	X		
Redirected replies	X		
File Routing	X		
Internet Faxing	X		
<b>Receive/reply to messages</b>			
New Mail Notification	X	X	
Notification Area Icon	X		
Voting Buttons	X		
Reply in same format received	X		
No indentation of reply/forward bodies	X	X	X
Out of Office Assistant	X	X	X
<b>Search for messages</b>			
Find	X		
Search capabilities (Advanced Find)	X	X	
Search folders	X	X <sup>2</sup>	
<b>Organize messages</b>			
Quick Flags/Message flags	X	X	
Categories and Master Category List	X		
Drag and drop messages	X	X	
Multiple views	X	X	X
Arrange by	X		
Grouping items	X	X	X
Group items by any field	X		
View by category	X		
View mail by follow-up flag	X		
Public Folders	X	X	X
Sort message list by standard fields	X	X	X
Set order/size of columns in message list	X		
Enhanced conversation management	X		
Manage messages by groups	X		
For Follow-Up folder	X	X <sup>2</sup>	
Display custom views	X	X <sup>3</sup>	X <sup>3</sup>
Create custom views	X		
Mark message as read or unread	X	X	
Recover deleted messages	X	X	X
User saves e-mail messages to Drafts folder	X	X	X
Mailbox cleanup	X		
Ability to disable individual rules	X		
Auto Archive	X		
E-mail Account Setup Wizard	X		
Test E-Mail Account tool	X		
User-configurable Delegate Access Permissions	X		
User configures Public Folder permissions	X		

**Table 3. e-Mail Feature Comparison Outlook 2003 to Outlook Web Access**

Interface	Outlook 2003 (Agency option- full client)	OWA Premium IE 6.0 & above	OWA BASIC (Agency option-any browser below IE 6.0.)
<b>Collaboration Features</b>			
Document workspaces	X		
Meeting workspaces	X		
Windows SharePoint Services integration	X		
Instant messaging	X		
<b>Calendar</b>			
Calendar views of different time periods	X	X	X
Calendar preferences	X	X	X
Side-by-side viewing or multiple calendars	X		
Meeting reminders (minutes, hours, or days in advance)	X	X	
Color individual or recurring appointments	X		
Notification of adjacent or conflicting appointments	X		
Lunar Calendar Support	X		
Offline use of calendar	X		
Create task from e-mail message	X		
<b>Address Book and Global Address List (GAL)</b>			
Address Book	X	X	X
Browsable Global Address List (GAL)	X		
Access to general GAL properties ( name, address, phone)	X	X	X
Access to advanced GAL properties(org chart, DL membership)	X		
Synchronized offline GAL	X		
<b>Schedule Meetings</b>			
Plan a face-to-face meeting	X	X	X
Use Address Book to pick attendees	X	X	X
View other user's free/busy information	X	X	X
Propose New Time	X		
Forward or reply to a meeting request	X	X	X
All-day events	X	X	X
Appointments summarized in Outlook Today	X		
Invoke calendar from meeting request to see full schedule	X	X	X
Include attachments in appointments and meeting requests	X	X	X
Insert e-mail messages as attachments in appointments and meeting requests	X		
Create Meeting Workspace in a meeting request	X		
Track acceptance of attendees to a meeting	X		
Attendee list visible to all attendees	X		
Send or receive requests over the Internet as calendar attachments	X		
Publish and retrieve free and busy information to the Internet with iCalendar subset	X		
Advanced, automatic meeting-request processing options	X		
Plan online meeting (NetMeeting)	X		
Microsoft Exchange Conferencing	X		
Free and busy view	X	X	X
<b>Contacts</b>			
Add/edit contacts	X	X	X
Send new message to contact	X	X	X
More than one physical and e-mail address listed in Contacts	X	X	X
Business Contact Manager	X		

**Table 3. e-Mail Feature Comparison Outlook 2003 to Outlook Web Access**

<b>Interface</b>	<b>Outlook 2003 (Agency option- full client)</b>	<b>OWA Premium IE 6.0 &amp; above</b>	<b>OWA BASIC (Agency option-any browser below IE 6.0.)</b>
Contact picture	X		
Use e-mail properties to add Contacts data	X	X	
Contact activity tracking	X		
View by company	X	X	X
Print address cards	X		
Important dates (birthdays/anniversaries) in Contacts listings	X		
Exchange virtual business cards (Vcards)	X		
Shared contacts	X		
Internet addresses listed in Contacts.	X	X	X
Multiple addresses in Contacts items	X	X	X
<b>Tasks</b>			
Create and manage tasks	X	X	X
Create task from e-mail message	X		
Simple and Detailed task views	X	X	X
View tasks by category	X		
View by active/completed/overdue status	X	X	X
Edit tasks in view	X		
Task reminders	X	X	
Task requests and tracking	X		
Tasks timeline view	X		
TaskPad view in Calendar	X		
<b>CUSTOMER Services</b>			
Alerts	X		
Outlook Custom Installation Wizard	X		
Recover Application	X		
Delegates have read-only access to other user's mailbox	X	X	X
Delegates can have edit permissions in other users' mailboxes	X		
Import/Export files	X		
Client-side Setup Wizard	X		
Hotmail Support	X		
Custom forms	X		
Consolidated offline settings	X		
Support for IMAP4, POP3, and SMTP	X		
<b>Security and Content Management</b>			
Information Rights Management	X	View Only	View Only
Junk E-Mail Filters	X		
Junk E-Mail Folder	X	X	X
Trusted Senders and Trusted Recipients Lists	X	X	X
Block External Content	X	X	X
Block attachments	X	X	X
Anti-virus enhancements	X		
Digital signature	X	X <sup>3</sup>	
Digital encryption	X	X <sup>3</sup>	
Single sign-on	X	X <sup>4</sup>	
Certificate Management	X		
Kerberos Authentication	X		
Automatic logoff after inactive period		X <sup>5</sup>	X <sup>5</sup>
Journal	X		

**Table 3. e-Mail Feature Comparison Outlook 2003 to Outlook Web Access**

Interface	Outlook 2003 (Agency option- full client)	OWA Premium IE 6.0 & above	OWA BASIC (Agency option-any browser below IE 6.0.)
Notes	X		
Integration with SharePoint Portal Server	X	X	X
Live Communications Server Integration	X		
Cached exchange mode	X		
Intelligent Connectivity	X		
RPC Connectivity to Exchange via HTTP	X		
Synchronization groups	X		
Background synchronization of local and server folders	X		
Differential, offline address-book synchronization with server	X		
Incremental change synchronization	X		
Smart change synchronization	X		
Pre-synchronization	X		
Offline synchronization	X		
Buffer packing	X		
MAPI compression	X		
Skip bad items	X		
Outlook performance monitoring	X		
Unicode PST Support	X		
Cancel request to server	X		
Send and Receive groups	X		
LDAP support and default list	X		

Source: Enterprise e-mail Consolidation Services Website

- 1 Outlook Web Access requires the use of Microsoft Exchange Server 2003
- 2 Search folders and For Follow-up Folders must be activated in Outlook online mode rather than cached Exchange mode.
- 3 This feature requires that the Outlook Web Access S/MIME control has been installed.
- 4 Single sign-on requires direct connection to Outlook Web Access on Exchange mailbox Server with NTLM enabled.
- 5 Automatic logoff requires that forms-based authentication is enabled.

According to GSD's analysis, each thick client connection is estimated to initiate ten more connections. Each connection spawns more connections to different services: calendaring, contacts, inbox, sent items, etc. Statistics gathered from February 2006 through August 2006 at peak times are shown in the table below.

**Table 4. Average Exchange Front-end Server Connections by Month**

Month	Number of Weekdays Sampled	Average Number of Connections per Day	10% Adjustment Increase	Load per Server Based on Average Number of Connections
February 2006	15	26,484	29,132	3,783
March 2006	14	26,448	29,093	3,778
April 2006	15	26,394	29,033	3,771
May 2006	22	27,183	29,901	3,883
June 2006	18	28,356	31,192	4,051
July 2006	18	29,969	32,966	4,281
August 2006	23	30,488	33,536	4,355

Source: GSD Records

In an ideal environment, seven front-end servers can conservatively handle about 6,500 connections each. Using HSD as an example, if its 1,100 thick client connections initiate ten connections each, then the number of connections for HSD alone are 11,000, which exceeds the load one server can handle and causes the load to be unbalanced.

**Table 1. Status of Weaknesses Identified in the 2003 Assessment**

<b>Security Component</b>	<b>2003</b>	<b>2006</b>
Enterprise-wide architecture for information security	None	None
A comprehensive awareness and education program	None	None
Capability to respond to an incident across agencies	None	None
Capability for identifying vulnerabilities	None	Improved
Centrally restrict access and manage statewide network	None	Improved
Capability and authority to promulgate or enforce information security policies	None	In Place
Physical security	Poor	Improved
Resources to restore business processes after a major disaster	None	None
Uninterruptible power supplies or backup generators	Insufficient/Obsolete	Improved
Tested disaster recovery plans	Insufficient	None
Information security plans	None	Making Progress

Source: Statewide Security Assessment and Strategic Plan for the State of NM 9/2003 and LFC Analysis

# SECURITY PLAN OUTLINE

## INTRODUCTION

### I. SYSTEM(S) IDENTIFICATION

System Name or Title.....  
Responsible Division .....  
Information Contact(s).....  
Assignment of Security Responsibility .....  
System Operational Status .....  
General Description/Purpose.....  
    *System Category*.....  
    *Multiple Similar System*.....  
System Environment .....  
System Interconnection/Information Sharing.....  
Laws, Regulations, and Policies Affecting the System.....  
Sensitivity of Information Handled.....  
General Description of Sensitivity .....

### II. MANAGEMENT CONTROLS

Risk Assessment and Management .....  
Review of Security Controls .....  
    *Independent Security Review and Findings*.....  
    *Other System Evaluation Approaches* .....  
Rules of Behavior.....  
Planning for Security in the Life Cycle.....  
Initiation Phase.....  
Development/Acquisition Phase .....  
Implementation Phase .....  
Operation/Maintenance Phase.....  
Disposal Phase .....  
Authorized Processing .....

### III. OPERATIONAL CONTROLS

Personnel Security.....  
    *Background Investigations and Personnel Selection*.....  
    *Separation of Duties*.....  
    *Main Computer Room Access*.....  
Physical and Environmental Security.....  
    *Routine Maintenance and Repair Service* .....  
    *Explanation of Physical and Environment Security* .....  
    *Computer Room Example* .....  
Production, Input/Output Controls.....  
Contingency Planning .....  
Maintenance Controls .....  
Data Integrity/Validation Controls.....  
    *Malicious Programs*.....  
    *Virus Protection*.....  
    *Message Authentication*.....  
    *Integrity Verification* .....  
    *Reconciliation*.....  
Documentation .....  
Security Awareness and Training.....  
Incident Response Capability.....

**IV. TECHNICAL CONTROLS**

Identification and Authentication .....  
    *Password Length* .....  
    *Password Composition* .....  
    *Password Maintenance* .....  
Authorization/Access Controls .....  
    *Logical Access Controls* .....  
    *Remote Users* .....  
Public Access Controls .....  
Audit Trails .....  
    *Audit Log Activity* .....  
    *Audit Records Attributes* .....

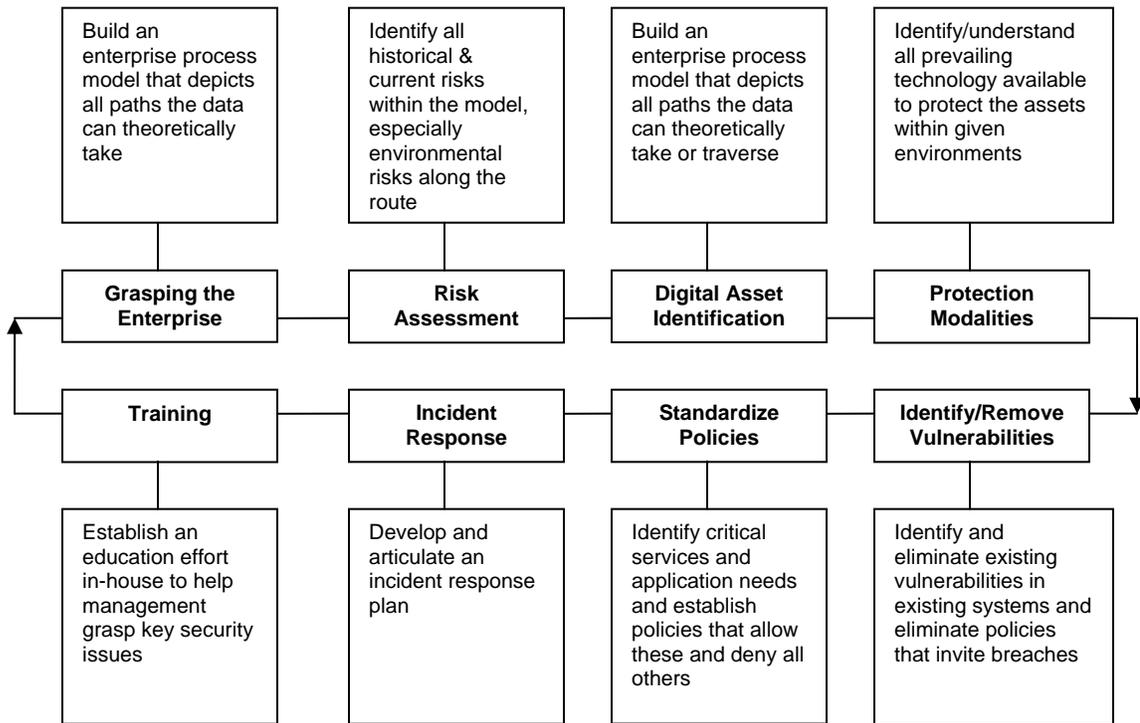
**GLOSSARY** .....

**Table 2. 2003 and 2004 Security Appropriation Received and Expended**  
(in thousands)

<b>Laws</b>	<b>Amount</b>	<b>Purpose</b>	<b>How Appropriation Was Spent</b>	<b>Amount</b>
2003, Chapter 76, Section 7	\$100.0	Security Assessment and Strategic Plan	Security Assessment and Strategic Plan	\$100.0
2004, Chapter 114, Section 8	\$700.0	Implement a Security Program, including <ul style="list-style-type: none"> <li>• Computer incident response team;</li> <li>• Threat and vulnerability reduction function;</li> <li>• Assessment and audit function;</li> <li>• Awareness and training</li> </ul>	<ul style="list-style-type: none"> <li>• Websense and MessageLabs Temporary Licensing</li> <li>• Salary Chief Information Security Officer</li> <li>• Baseline Security Program Plan and Architecture Framework</li> <li>• Virtual Firewall, MARS, Firewall Management System, Intrusion Protection Firewalls (GSD)</li> </ul>	\$401.0  \$76.1  \$53.5  \$165.2

Source: LFC Analysis

**Figure 1. Proactive Security Plan Fast-Track Cycle**



Source: Maximum Security

**Table 1. Estimated IT Vacancy Savings on Positions Vacant as of 7/1/06**

<b>Position Title</b>	<b>Workdays vacant</b>	<b>Work Weeks Vacant</b>	<b>Vacancy Savings</b>
A/O II – IT	1,276	255.2	\$438,129
Comp Optr – A	388	77.6	\$46,902
Computer Optr – B	205	41.0	\$20,287
Computer Optr – O	2,146	429.2	\$233,658
Data Entry Keyr – O	381	76.2	\$31,821
Gen 1 – IT	430	86.0	\$147,645
IT Apps Dev 1	1,209	241.8	\$219,940
IT Apps Dev 2	5,929	1,185.8	\$1,209,516
IT Apps Dev 3	7,771	1,554.2	\$2,570,886
IT Business Analyst	1,243	248.6	\$325,169
IT Database Admin 1	495	99.0	\$90,050
IT Database Admin 2	2,831	566.2	\$760,243
IT Generalist 1	2,254	450.8	\$459,816
IT Generalist 2	130	26.0	\$34,008
IT Network Spec 1	616	123.2	\$112,062
IT Network Spec 2	2,974	594.8	\$606,696
IT Network Spec 3	629	125.8	\$144,721
IT Project Manager	128	25.6	\$33,485
IT Systems Manager 2	896	179.2	\$163,000
IT Systems Manager 3	1,505	301.0	\$346,272
I Systems Manager 4	1,794	358.8	\$469,310
IT Tech Support Spec 1	738	147.6	\$109,048
IT Tech Support Spec 2	3,924	784.8	\$640,397
IT Tech Support Spec 3	1,126	225.2	\$204,841
Staff – IT	325	65.0	\$85,020
<b>Total</b>	<b>41,343</b>	<b>8,268.6</b>	<b>\$9,502,922</b>

Source: State Personnel Office Table of Organizational Listings as of 7/1/06

**Table 2. Enterprise e-Mail Service Description And Fees**

<b>Item</b>	<b>Service</b>	<b>Description</b>	<b>Fee</b>
1	Primary mailbox and extended storage services	e-mail configuration and access, global address search, 100MB primary storage, 20 MB e-mail size including attachments, Exchange server and storage area network administration, web access, security, directory services and disaster recovery.	<b>\$9.85</b> per month per user account or current published rate ( <b>FY08 Rate \$10.62</b> )
<b>Exchange Optional</b> (out-of-scope) <b>Fee Based Services</b> – Services outside of the scope of standard e-mail provisioning are offered as a value added service included, but are not limited to items 2 – 5 below.			
2	Restoration of individual mailboxes	Restoring individual mailboxes for the purpose of recovering deleted message(s) or responding to a Freedom of Information Act request, etc are not included as part of the base fee. Requests for such a service should be submitted via e-mail to the Provider (GSD) enterprise support desk	<b>\$83.50</b> per hour labor charge or current published rate. A one hour minimum charge will apply.
3	Blackberry	This option provides support for the Blackberry enterprise server environment which enables customers to receive their e-mail via Blackberry devices. Support is for the backend server side only. This option does not include monitoring or management of any handheld devices or wireless carrier or the third party Blackberry services itself.	<b>\$50.00</b> per license or current published rate. Customer will pay vendor for device and airtime. Additional monthly charges may apply in the future.
4	Additional mailbox storage	This option allows the customer to select a larger primary mailbox size than the standard 100MB in the base service. Additional capacity will be provided in increments of 100MB	<b>\$9.85</b> per 100MB per month or current published rate. ( <b>FY08 Rate: \$8.38</b> )
5	Mobile client devices	Exchange 2003 provides a new feature called Outlook Mobile Access that allows users to access Exchange data using mobile devices. Exchange 2003 provides two services for mobile users: Microsoft Exchange ActiveSync and Microsoft Outlook Mobile Access.	\$0.0 for set up. This is an integrated service within the Exchange environment. Customer will pay vendor for device and airtime.

Source: DOL e-Mail SLA

**Table 1. MAGportal Appropriations, Expenditures and Reversions/Transfers**  
(in thousands)

<b>APPROPRIATIONS</b>	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>	<b>FY05</b>	<b>Total</b>
Laws 2001, Chapter 64, Section 8, Subsection 9	\$700.0				\$700.0
Laws 2002, Chapter 4, Section 7, Subsection 8		\$1,000.0			\$1,000.0
Laws 2003, Chapter 76, Section 7, Subsection 3			\$100.0		\$100.0
Laws 2003, Transfers from TRD (\$50.0K), PRC (\$70.0K) and ED (\$25.0K) language in applicable subsections of section 8			\$145.0		\$145.0
Laws 2004, Chapter 114, Section 8, Subsection 10				\$150.0	\$150.0
<b>Total Appropriations and Transfers</b>	<b>\$700.0</b>	<b>\$1,000.0</b>	<b>\$245.0</b>	<b>\$150.0</b>	<b>\$2,095.0</b>
<b>EXPENDITURES</b>					
Professional Services	(\$550.0)	(\$410.0)		(\$35.2)	(\$995.2)
Software/Web share	(\$210.0)	(\$470.0)			(\$680.0)
<b>Total Expenditures</b>	<b>(\$760.0)</b>	<b>(\$880.0)</b>	<b>\$0.0</b>	<b>(\$35.2)</b>	<b>(\$1,675.2)</b>
<b>REVERSIONS/TRANSFERS</b>					
Transfer from OCIO to TRD (1)			(\$213.5)		(\$213.5)
Transfer from OCIO to DFA			(\$378.3)		(\$378.3)
<b>Subtotal All Years</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>(\$591.8)</b>	<b>\$0.0</b>	<b>(\$591.8)</b>
<b>Total All Years</b>	<b>(\$60.0)</b>	<b>\$120.0</b>	<b>(\$346.8)</b>	<b>\$114.8</b>	<b>(\$172.0)</b>

Source: Agency Records, LFC Files

(1) TRD reverted funds transferred by the OCIO as follows: \$93.5 to DFA (general fund), \$70.0 to PRC; \$50.0 to ONGARD

**Table 2. Summary MAGportal Appropriations, Expenditures and Reversions/Transfers**  
(in thousands)

	<b>FY02</b>	<b>FY03</b>	<b>FY04</b>	<b>FY05</b>	<b>Total</b>
Total Appropriations and Transfers TRD (\$50K), PRC (\$70K) and ED (\$25K)	\$700.0	\$1,000.0	\$245.0	\$150.0	\$2,095.0
Total Expenditures	(\$760.0)	(\$880.0)	\$0.0	(\$35.2)	(\$1,675.2)
Transfer from OCIO to TRD (1)			(\$213.5)		(\$213.5)
<b>Total All Years</b>	<b>(\$60.0)</b>	<b>\$120.0</b>	<b>\$31.5</b>	<b>\$114.8</b>	<b>\$206.3</b>

Source: Agency Records, LFC Files

(1) TRD reverted funds transferred by the OCIO as follows: \$93.5 to DFA (general fund), \$70.0 to PRC; \$50.0 to ONGARD

## Detailed e-Government Portal Recommendations

- Build the business case. Failure to identify business objectives and success criteria can lead to failure, even before beginning.
- Estimate the cost of the initiative. Before selecting a platform, understand the user experience, integration options and security solutions that are required. Consider the full range of expenditures, including licensing, training, design, development, testing and maintenance costs. Revisit costs once the platforms are identified and a plan is established.
- Consider a phased approach. Since portals generally integrate a number of applications, these initiatives tend to be highly transactional and commonly incorporate advanced security features. Do not expect to get every feature into the first release. Focus on the highest-priority business scenarios first – to ensure initial success.
- Establish a governance structure. Because portals integrate assorted experiences and applications from dispersed business units, there can be governance issues across the enterprise. Clarity around decision-making is critical. Establish and secure the resources required to support the initiative. Without support from the top down, the portal initiative will always be at risk.
- Invest in training. If a commercial portal product is chosen, realize that portal infrastructures provide a different way of architecting solutions. To efficiently leverage the platform’s capabilities, a solid understanding is needed of how the portal platform works, so training should be scheduled once the platform is selected. Include critical support skills for a core team in any future portal development costs. The core team can then serve as a knowledge center to assist agencies to bring their applications to the portal. Even if the portal is outsourced, state resources will be required to format and clean data; to establish policies on data access; to audit the access, approve and design interfaces, balance payments, load data, answer e-mails, assist in debugging, etc.
- Establish the infrastructure. Infrastructure delays can frequently impede projects. Plan portal development and runtime environments early on, possibly as distinct phases that are managed accordingly.
- Design the user experience. The “behind the scenes” work of various applications integrated by the portal should be invisible to the user, no matter how complex. Common tools used to ensure a successful user experience include usability testing, personas, user surveys, task analysis, card sorting and taxonomies.
- Clarify content management infrastructure. Although the goal is an integrated and seamless front end, portal content is often managed by dispersed business units, each with disparate development and workflow requirements. In many legacy applications, a simple content change requires a striking amount of lead time; this is in direct conflict with the notion that portal success is measured by its ability to deliver timely information and services. Content management systems can address this difficulty, providing business units with greater control over content and allowing non-technical users to manage content using familiar desktop tools. Content management should be an enterprise-wide effort that facilitates the many content needs of the portal application.
- Identify security needs. Portals generally require security services such as confidentiality, integrity, and availability. Because portals integrate multiple applications, single sign-on is often critical for a successful user experience, as it provides security across applications using a single authentication request.

- Invest in testing. Portal projects bring together a large amount of functionality. If managed improperly, integration may result in unexpected and complex issues, such as contention for system resources. Define test cases early and plan for extensive user testing to ensure a scenario that works across the enterprise. With technology advancements that have vastly improved portal products, a portal can be a sound business investment. However, organizations evaluating portals should understand the complexities beyond technology. Because the technology frequently integrates a diverse set of content and services, portal initiatives tend to cross organizational boundaries and involve multiple stakeholders with differing business objectives.
- Include face-to-face meetings with key users, frontline workers, high-level management and other interested parties. Employ focus groups, professional organization meetings and other informal avenues to speak to the citizens and professionals who are likely to take advantage of portal services. Do not rely solely upon online surveys.
- Solicit meaningful input from users (constituents).
- Involve frontline agency workers who regularly deal with customers in portal planning, design and presentation. If agency employees don't support e-government, the project will be jeopardized.
- Bring interested parties to the table early to avoid conflicts and clarify misunderstandings that might hinder implementation and acceptance of the portal.
- Develop and follow through on policies and standards essential to maintaining the portal. Review other states' best practices as part of the process.