REPORT OF

THE

STATE AUDITOR

Financial Management of Network Services
Colorado Information Technology Services
Department of Personnel/GSS

Performance Audit
August 2000

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August 15, 2000

Members of the Legislative Audit Committee:

This report contains the results of the performance audit of the financial management of the State's network services. This audit was conducted pursuant to Section 2-3-103, C.R.S., which authorizes the State Auditor to conduct audits of all departments, institutions, and agencies of state government.

This report presents our findings, conclusions, and recommendations, and the responses of the Colorado Information Technology Services and the Department of Personnel.

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Authority, Purpose, and Scope

This audit of the financial management of the State's network services was conducted under the authority of Section 2-3-103, C.R.S., which authorizes the State Auditor to conduct audits of all departments, institutions, and agencies of state government. This audit was conducted according to generally accepted government auditing standards. Audit work was performed from March 2000 through May 2000.

The purpose of this audit was to review and evaluate the financial management of network services by the Colorado Information Technology Services (CITS) in the Department of Personnel/General Support Services (GSS). Network services include voice and data communications.

This report contains findings and five recommendations for improving the financial management of network services. We would like to acknowledge the efforts and assistance extended by management and staff at the Department of Personnel/GSS, CITS, and user agencies. The following summary provides highlights of audit comments, recommendations, and responses contained in the report.

Financial Management

Network services are primarily funded through user fees. User fees are deposited in the Telecommunications Revolving Fund. Statutes require that the user fees cover the costs of the services and also be competitive with private industry.

Overall, we found that the financial operations for the State's telephone and data communications functions (network services) have been poorly managed for several years. CITS had reduced its fees for long-distance telephone services in 1997 in response to a federal review that showed the rates exceeded the costs of the services. As a result, revenues have not been sufficient to pay expenses since 1997. In other words, the user fees charged for network services have not covered the full costs of these services as required by state statutes. In order for CITS to cover network services' operating expenses, it has had to borrow money from the State Treasury. In Fiscal Year 2000 this loan grew to more than $4 million. The Fund's retained earnings (net worth) also decreased from Fiscal Years 1997 to 2000.

For further information on this report, contact the Office of the State Auditor at (303) 866-2051.

CITS management did not begin actively addressing the network services financial problems until October 1999. Management began exploring various options for solving the problems. In late Fiscal Year 2000 management decided to increase rates for services and to request a budget supplemental of more than $4 million to reimburse the costs of a previous communications project with capital construction funds. If CITS does not receive the capital construction funding, it will increase its rates to higher levels. Some rates will be set higher than market levels in order for CITS to cover its costs.

We recommend that CITS develop and implement an alternative plan (to obtaining capital construction funding for a past project) by October 31, 2000. The plan should address how it will (1) eliminate the cash deficit, and pay off its loan; (2) comply with state statutes to charge the full costs of network services; (3) ensure that the rates charged are competitive with the market as required by statute; (4) monitor the Telecommunications Revolving Fund to ensure it is consistent with federal requirements; and (5) make adjustments to improve financial operations in a timely manner.

Rate-Setting

We reviewed how CITS sets rates for network services. We found that:

- From June 1997 to March 2000 CITS did not charge users for $2.3 million in costs. However, as of July 2000, CITS had recovered over $550,000 of these costs through backbilling agencies and negotiations with the long-distance vendor.

- CITS has not clearly defined its rate-setting approach.

We recommend that CITS improve rate setting and comply with state statutes by (1) establishing and documenting a systematic approach for determining rates; and (2) developing a continual rate and cost review process to ensure that rates charged cover costs. Rates should be adjusted as needed.

Cash Flow Projections

We evaluated the five-year cash flow projection submitted by CITS as part of its Fiscal Year 2000 application for a loan with the State Treasury. We found that:

- Revenues were inflated.

- Contingencies were not included.

We recommend that CITS improve how its projects future revenues and expenditures for network services by (1) revising the five-year cash flow projection; (2) reevaluating the projection periodically to ensure future cash inflows and outflows are correctly forecasted; and (3) reassessing the viability of the proposal with QWEST to determine if revenues will be sufficient to cover costs.

Leasing

In order to keep up with today's fast-changing technology, CITS must constantly update its equipment and network infrastructure. We found that:

- In recent years CITS acquired most of its equipment using cash funds.

- Management has not fully evaluated options for purchasing versus leasing equipment. With the swiftly changing technology that CITS regularly deals with, leasing could greatly enhance its operational and financial activities.

We recommend that CITS should reevaluate its approach for acquiring network services equipment by assessing whether it is feasible to lease rather than outright purchase some equipment.

Outsourcing

We identified several problems with the network services provided by CITS. Concerns raised by representatives of four large user agencies ranged from network services' billing issues to difficulty in obtaining help from staff at CITS. Although CITS management has recently taken actions to improve financial oversight of network services, more needs to be done. Greater outsourcing could solve some of the operational, financial, and customer services problems.

We recommend that the Department of Personnel/GSS reassess the value currently received from the CITS operation of network services and determine if any or all of it could be outsourced.

CITS generally agrees or partially agrees with our recommendations. Responses can be found in the Recommendation Locator on pages 5 and 6. Additionally, CITS believes:

> "The recommendations in their purest form make sense. GSS/CITS agrees, and has already implemented some of the recommended measures that will be discussed in detail further on. However, the background text leading up to the recommendations does not portray a full account of why and where things really are, therefore GSS/CITS believes that the audit is incomplete. All in all, the audit recommendations are sound, but the audit clearly does not reflect the complexity of the environment in which Network Services operates, or up-to-date and comprehensive information as to what has been accomplished thus far. ...***In March 2000, GSS specifically requested help from the State Auditor's Office to verify that what we were doing was sound, that the plan made sense, and asked for additional advice as to how things could be managed better in the future.***"

RECOMMENDATION LOCATOR

Rec. No.	Page No.	Recommendation Summary	Agency Addressed	Agency Response	Implementation Date
1	21	Comply with statutes by charging the full cost of telephone and data communication services; ensure that rates are competitive with the market; monitor the Telecommunications Revolving Fund to ensure that it is consistent with federal requirements; and make adjustments that improve financial operations in a timely manner.	Colorado Information Technology Services	Partially Agree	New rates: July 1, 2000. Monitoring: June 30, 2000
2	28	Establish and document a systematic approach for rate setting and develop a continual rate and cost review process.	Colorado Information Technology Services	Agree	Systematic Approach: Implemented. Enhancements: December 31, 2000 Monitoring: September 30, 2000
3	31	Improve cash flow projections.	Colorado Information Technology Services	Agree	June 30, 2000

RECOMMENDATION LOCATOR

Rec. No.	Page No.	Recommendation Summary	Agency Addressed	Agency Response	Implementation Date
4	33	Reevaluate approach for acquiring equipment by assessing whether it is feasible to lease rather than purchase.	Colorado Information Technology Services	Agree	Implemented
5	37	Reassess the value currently received from the network operations, and determine if any or all of it could be outsourced.	Department of Personnel	Agree	February through June 28, 2000

Description of State Telecommunications

Background

According to Section 24-30-903, C.R.S., the Department of Personnel/General Support Services (GSS) is charged with providing telecommunication services to the Colorado state government. The Department assigned these responsibilities to one of its units, Colorado Information Technology Services (CITS). Among its other responsibilities, CITS provides four telecommunications-related services to state, local, and federal agencies:

- **Telephones**. CITS is responsible for management of all state telephone facilities and services.

- **Data networks**. CITS operates several communications networks. Currently CITS has contracted with a private vendor for a new Multi-Use Network (MNT), which is designed to replace the State's older communications networks. CITS plans to fully implement the MNT within the next three years.

- **Public safety.** CITS maintains voice, video, data, and two-way radio communications for approximately 250 public safety agencies of state, county, city, and federal governments.

- **Video**. CITS provides switching capability for state agencies to participate in video conferencing.

Budget and Staffing

For Fiscal Year 2000 the Department of Personnel/GSS was appropriated 63 FTE and over $21 million for telecommunications activities. The General Assembly appropriated these funds for the four telecommunications services to two funding areas:

- **Network Services** consists of funding for telephone, data, and video communications. Most of the revenue for network services is from user fees. Revenues generated from these fees are deposited in the Telecommunications

Revolving Fund. Section 24-30-903, C.R.S., requires that the money in the Telecommunications Revolving Fund be " limited to telephone service and data communications and shall not include public safety or radio systems."

- **Communications Services** consists of funding for the public safety and radio activities. Most of the funding for communications services comes from the General Fund and is placed in the Public Safety Communication Trust Fund. According to Section 24-30-908.5, C.R.S., the Public Safety Communications Trust Fund was created for the "acquisition and maintenance of public safety communication systems." Appropriations for the Public Safety Communications Trust Fund are used for the Digital Trunked Radio System as discussed below.

The following chart shows the sources and amounts of funding appropriated for these two service areas in Fiscal Year 2000.

Colorado State Government's Telecommunication Functions
Appropriations
For Fiscal Year 2000

Funding Source	Communications Services	Network Services	TOTALS
General Fund	$2,863,307	$0	$2,863,307
Cash Funds	$0	$229,053	$229,053
Cash Funds Exempt	$106,608	$18,226,048	$18,332,656
Federal Funds	$52,268	$0	$52,268
TOTALS	**$3,022,183**	**$18,455,101**	**$21,477,284**

Source: Office of the State Auditor's analysis of the Fiscal Year 2000 Long Bill.

In addition, the General Assembly appropriated capital construction funds for two major communications projects in Fiscal Year 2000:

- **Multi-Use Network.** More than $4 million in capital construction funds were appropriated for the MNT. As discussed above, the MNT will eventually replace the older state telecommunications network. This project will cost about $37 million over five years.

- **Digital Trunked Radio System**. About $14 million per year in capital construction funds were appropriated for this project beginning in 1998. This single digital system is replacing the outdated analog public safety radio systems used by state agencies.

Organizational Structure

Until May 2000 the Telecommunication Services unit within CITS carried out telecommunications activities for the State. In May the Department of Personnel/GSS reorganized telecommunications activities. According to management, the reorganization was done to address the significant management and financial oversight problems discussed later in this report. Telecommunications functions are now carried out by five CITS units:

- **Technical Design and Infrastructure** manages a majority of the network services, including the Asynchronous Transfer Mode network, the Digital Data Network, Systems Network Architecture, voice communications, Internet access, and video conferencing.

- **Telecommunications and Public Safety** is responsible for the Digital Trunked Radio System, mobile radios, microwave field services, and other public safety communications functions.

- **Technical Administration** provides customer service for network services.

- **Technical Business Applications** manages the Multi-Use Network project.

- **Business Services** provides support services including budget preparation, accounting, user billing, calling cards, contract, purchasing, payroll, procurement approval, and rate setting.

Financial Management of Network Services

Chapter 1

Background

As discussed in the Description section, funding for the State's network services is mainly provided by user fees. Network services include voice (telephone) and data communications. Colorado statutes require that the Department of Personnel/GSS charge users the full cost of each service. User fees are deposited in the Telecommunications Revolving Fund. The General Assembly makes annual appropriations to the Department of Personnel/GSS "for use in acquiring such materials, supplies, labor, and overhead as are required for telephone and data communications related service functions." Statutes also require that network services be "competitive with private industry with regard to the cost, timeliness and quality of the telephone service or data communication functions."

Currently responsibilities for network services are spread across all five units in Colorado Information Technology Services (CITS), Department of Personnel/GSS. CITS management is ultimately responsible for overseeing the financial and operational activities of the State's network services.

CITS Needs to Improve Financial Management for Network Services

Overall, we found that the financial operations for the State's telephone and data communication functions (network services) have been poorly managed for several years. Revenues have not been sufficient to pay expenses since 1997. In other words, the user fees charged for network services have not covered the full costs of these services as required by state statutes. In order for CITS to cover network services' operating expenses, it has had to borrow money from the State Treasury to cover day-to-day operating expenses. As discussed later, this loan has grown to more than $4 million.

As shown in the following chart, beginning in Fiscal Year 1997, the Fund's operating expenses exceeded the revenues collected. In fact, CITS spent $4.7 million more than it received in revenues for network services from Fiscal Years 1997 to 2000. As described throughout this report, lack of oversight by management has led to major operational and financial problems for the State's network services.

Telecommunications Revolving Fund
Operating Revenues and Expenses
Fiscal Years 1996 to 2000

Fiscal Year	Operating Revenues	Operating Expenses	Operating Income (Loss)
1996	$7,749,000	$7,470,000	**$279,000**
1997	$7,085,000	$8,086,000	**($1,001,000)**
1998	$7,456,000	$8,749,000	**($1,293,000)**
1999	$8,005,000	$8,798,000	**($793,000)**
2000*	$9,517,862	$11,441,711	**($1,923,849)**
TOTALS	**$39,812,862**	**$44,544,711**	**($4,731,849)**

Source: Office of the State Auditor's analysis of the Comprehensive Annual Financial Reports for Fiscal Years 1996 to 2000.
***** The Fiscal Year 2000 figures are estimates. The actual data were not available at the time of the audit.
Note: This does not reflect nonoperating activity, such as transfers out to other entities.

Additionally, the retained earnings of the Fund have decreased annually from Fiscal Years 1997 to 2000 as shown in the following table. Retained earnings are a measure of an organization's net worth and are that portion of the organization's income that is retained for use in operations. Negative retained earnings show that an organization is having financial problems.

Telecommunications Revolving Fund
Retained Earnings Balance
Fiscal Years 1996 to 2000

Fiscal Year	Retained Earnings as of the End of the Year	Change From Prior Year
1996	$4,353,000	14.1%
1997	$3,761,000	-13.6%
1998	$2,899,000	-22.9%
1999	$2,090,000	-27.9%
2000*	-$139,000	-106.7%

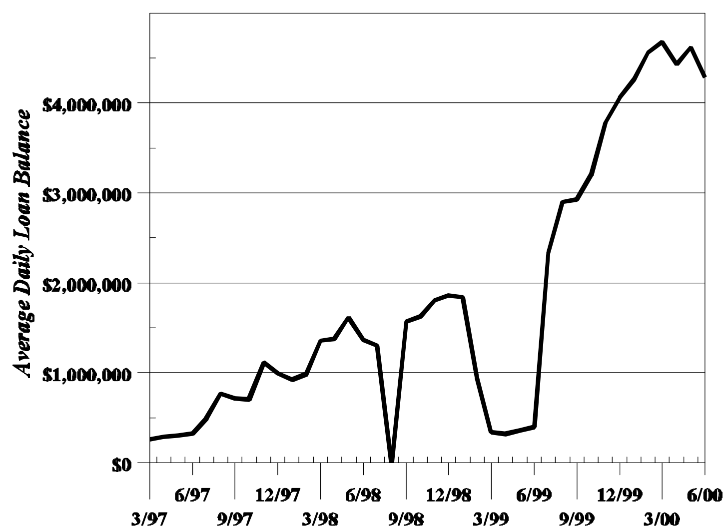
Source: Office of the State Auditor's analysis of the Comprehensive Annual Financial Reports for Fiscal Years 1996 to 1999 and data provided by the Colorado Information Technology Services for Fiscal Year 2000.
* The Fiscal Year 2000 figure was provided by CITS and is the unrestricted unreserved fund balance as of 6/30/00. The final audited amount was not available at the time of the audit.
Note: This does not represent the entire fund balance for the Telecommunications Revolving Fund, which would also include contributed capital.

CITS Has Borrowed More Than $4 Million due to Growing Cash Deficit

CITS heavily relies upon cash to conduct network services' operations. However, because CITS has spent more than it has received in revenues for network services, there has been no cash in the Telecommunications Revolving Fund. This has resulted in CITS's having to borrow money from the State Treasury beginning in 1997 to meet monthly operating expenses for network services. As of June 2000 the average loan balance with Treasury had grown to $4.2 million. In addition, Colorado law requires that the State Treasury charge interest on loans to state agencies. From March 1997 to June 2000 the loan for network services accrued more than $360,000 in interest. About $231,000 (64 percent) of these interest charges was accumulated during Fiscal Year 2000. Not only has management been unable to reduce the loan balance, but it has not been able to cover the interest charges. Even if management were able to break even in network services' cash inflows and outflows, the loan balance would still be increasing due to the interest charges.

Although CITS has been able to reduce its loan balance occasionally, this balance grew from approximately $400,000 in June 1999 to more than $4.2 million in June 2000, a 950 percent increase. According to CITS staff, about $2.7 million was spent for infrastructure improvements in Fiscal Year 2000. In addition, as discussed later, we identified several costs that were incurred but not passed on to user agencies as required by statute. From July 1999 to March 2000 more than $1.3 million in costs was not billed to user agencies. Additionally, CITS was charged about $231,000 in interest on the loan as discussed above. As shown by the following chart, the loan balance varies by month.

Average Monthly Loan Balances for Network Services
From March 1997 to June 2000



Source: Office of the State Auditor's analysis of loan information provided by the State Treasurer's Office.

Financial Problems Began After Rates Were Reduced in 1997

CITS began experiencing financial problems for network services shortly after it reduced its telephone service rates in 1997. As can be seen in the chart below, the rates for telephone services were reduced by 23 to 42 percent.

Telephone Rate Reductions in 1997			
Service Type	**Rates (per minute) Prior to the 1997 Change**	**Rates (per minute) After the 1997 Change**	**Percent Change in Rates**
Long-Distance Calls	$0.13	$0.10	-23%
International Calls	$1.35	$0.95	-30%
Canadian Calls	$0.60	$0.35	-42%

Source: Office of the State Auditor's analysis of information provided by the Colorado Information Technology Services.

The reduced rates resulted in less revenue being collected for network services. Specifically, fees charged for long-distance services have generated a major portion of network services' revenue. Reducing these rates by nearly 25 percent brought a significant decline in revenue for network services. As a result, the retained earning for the Telecommunications Revolving Fund decreased.

We were unable to determine the methodology CITS used to reduce the telephone service rates in 1997 because staff who made the decision are no longer employees of the State and current staff were unaware of the approach taken. Additionally, CITS could not provide documentation to describe the methods used for the rate reduction.

Rates Were Reduced as a Result of Federal Review

According to current CITS and Colorado Office of the State Controller staff, CITS lowered the telephone rates in 1997 in response to a review of the Telecommunications Revolving Fund by the federal Division of Cost Allocation in the U.S. Department of Health and Human Services. The Division had determined that the Fund had excess retained earnings according to federal requirements. (Note that the federal requirements for calculating retained earnings differ from the State Controller's.) The Division believed its analysis showed that the network services' rates were too high (i.e., they exceeded the costs of services provided) and thus, CITS "was making a profit" on its network services.

In the early 1990s CITS had raised it rates for network services in order to accumulate a large cash balance for future needed infrastructure improvements.

Management planned to have cash on hand to pay for these major telecommunications changes.

Federal Requirements Prohibit Central Service Agencies From Having Excess Retained Earnings

The federal government provides financial grants to many state agencies (e.g., Department of Human Services) to pay for various services. Some of these grantee agencies pay other state agencies for services through user fees. These payee agencies are called central service agencies. States identify the central service agencies in the annual Statewide Indirect Cost Allocation Plan (SWCAP) that is submitted to the federal Division of Cost Allocation. Central service agencies include motor pools, data centers, and telecommunication agencies. Through negotiations between each state and the federal Division of Cost Allocation on the SWCAP, central service agencies are allowed to bill state agencies that receive federal grants because the federal government reimburses these costs. In Colorado the Office of the State Controller prepares the SWCAP and negotiates with the federal Division of Cost Allocation.

Each annual SWCAP also includes a reconciliation of the costs and revenues of the central service agencies for the previous year. The federal Division of Cost Allocation reviews these reconciliations to determine if any of the central service agencies had retained earnings exceeding the amount allowable by federal guidelines. These guidelines allow each central service agency to have up to 60 days of operating reserve in its ending retained earnings balance for the year. The federal Division of Cost Allocation considers a central service agency to have excess retained earnings if it has more than a 60-day operating reserve. The Division believes that central agencies that have more than a 60-day operating reserve have made a profit and thus have charged other agencies too much. Because the federal government has reimbursed other agencies for the costs of these services, the federal government can then demand that the central service agency pay the federal government its portion of the excess. The federal portion for each central service agency is based on the percentage of funding the agency receives from each grantee agency. In 1997 the federal portion for the CITS network services was 19.4 percent.

The review by the federal Division of Cost Allocation showed that by the end of Fiscal Year 1997 the Telecommunications Revolving Fund's retained earnings exceeded the operating reserve allowed by federal requirements by more than $3.3 million. According to the federal formula, about $650,000 of this excess was the federal portion.

The Office of the State Controller and the Division of Cost Allocation negotiated an agreement to resolve this issue. The State agreed that CITS would pay the federal government $500,000 for the excess as well as reduce its rates so that by the end of Fiscal Year 1999 the excess would be eliminated. CITS took these actions, and by the end of Fiscal Year 1998 the Telecommunications Revolving Fund no longer had retained earnings that exceeded the allowable operating reserve. In fact, because the rates were set below costs, the federal government ended up paying less for services than it should have.

Other States Have Encountered Problems

We found that Colorado is not the only state that has experienced problems with its telecommunication program's fund. During the audit, we surveyed other states to determine if they had cash or fund problems for their telecommunication programs. Nine of the sixteen states that responded to the survey reported that their telecommunication programs had retained earnings balances that exceeded allowable operating reserve. Actions these states took to resolve the problem included:

- Five states reported that they were required to repay the federal government its portion of the excess retained earnings.

- Five states adjusted their rates, as did Colorado, to eliminate the excess and avoid excesses in the future.

- One state reported that it issued a credit or rebate to the user agencies to return the overbilled amount.

- Three states reported that they monitor their billing rates to avoid future excess retained earnings.

Three of the nine states that had excess retained earnings also had to borrow money from their state treasuries because of resulting cash deficits.

We did not audit the U.S. Department of Health and Human Services. However, we believe that the federal government's focus on regulating state agency fund balances is an inappropriate way to monitor and control federal expenditures. This is an indirect and flawed approach to determine whether rates are fair. A better and more direct method would be to evaluate the actual rates charged for network services provided to federally funded agencies and to ensure that these rates are reasonable. This approach would eliminate the need to control state agencies' fund balances as a way of controlling federal expenditures.

In spite of our criticism of the policies established by the federal government, these policies are still in place and Colorado needs to deal with them. Yet we found that CITS management has not effectively addressed the issues related to these policies. For instance, CITS did not assess the short- and long-term effects from actions it took to avoid accumulating retained earnings that exceeded the allowable operating reserve. Staff did not evaluate how reducing rates in 1997 would impact network services operations as a whole. In addition, when CITS reduced the rates so that the balance did not exceed the 60-day operating reserve in Fiscal Year 1998, management did not subsequently reevaluate whether rates could be increased. Instead, CITS continued charging the reduced rates, and the cash deficit increased.

CITS Could Have Avoided Financial Problems if Management Had Taken Appropriate Actions Earlier

Until August 1999, CITS management had not monitored the financial activities for network services. It primarily focused on preventing a future problem with the Telecommunications Revolving Fund that would have required it to repay the federal government for excess retained earnings. Management failed to address the growing network services' financial problems. Management was minimally involved in monitoring and overseeing network services' financial activities until recently. This resulted in management's failure to promptly identify and correct serious operational and fiscal problems as they developed. As discussed in greater detail later, these problems include how CITS (1) set rates for network services, (2) reviewed costs, (3) acquired equipment, and (4) outsourced functions. If CITS had resolved these problems in a timely manner, it could have reduced and paid off its loan with the Treasury. CITS either would not have had to borrow money for operating expenses from the Treasury or could have repaid a smaller loan quicker.

We found that had CITS management thoroughly evaluated in 1997 how reducing the rates for network services would have impacted its financial situation, it could have avoided the major financial problems it has experienced. Specifically, we found that the approach CITS management took in resolving the issue was flawed. CITS could have paid the $650,000 it owed to the federal government but not reduced the long distance telephone rates. By establishing appropriate rates as well as billing for more than $2.3 million in costs not passed on to users (as described in greater detail later), CITS would not have had a loan balance at the end of Fiscal Year 2000. Further, for Fiscal Years 1998 and 1999 the retained earnings for the Fund would not have exceeded the allowable operating reserve according to federal rules. We were unable to determine the impact of not reducing rates on the Fund for Fiscal Year 2000 because this information was not available during the audit.

CITS Is Requesting That the General Assembly Forgive Debt

CITS management did not begin actively addressing the dire financial situation until October 1999. Management began exploring various options for eliminating the cash deficit and repaying the loan. Some of these options include (1) increasing rates for services, (2) reducing spending, and (3) requesting a budget supplemental to reimburse the costs of a previous communications project with capital construction funds. As discussed below, management has chosen to request capital construction funding for a previously funded project and also to raise rates.

For the 2001 Legislative Session, CITS plans to submit a request to the General Assembly for $4.8 million in capital construction funding for a project approved for Fiscal Years 1994 to 1999. CITS management and staff believe that the initial funding of this project—the microwave equipment replacement project—greatly contributed to the growth of the network services' cash deficit. As the following chart shows, CITS was required to recover more than $5.5 million in costs for this project from fees charged to users (cash funds). This represents 70 percent of the project's entire cost.

Microwave Equipment Replacement Project
Funding for Fiscal Year 1994 to Fiscal Year 1999

Funding Source	FY 1994 to 1996	FY 1997 to 1999	TOTALS
Capital Construction	$924,404	$1,497,629	**$2,422,033**
Cash	$3,263,259	$2,298,595	**$5,561,854**
TOTALS	**$4,187,663**	**$3,796,224**	**$7,983,887**

Source: Office of the State Auditor's analysis of information provided by the Colorado Information Technology Services.

According to management, the microwave system is mostly used for public safety purposes. Yet CITS was required to recover 70 percent of the project cost through network services' user fees, not public safety communication funds. Management believes this violates state statutes. Specifically, according to Section 24-30-908, C.R.S., the "[Telecommunications] revolving fund shall be limited to telephone service and data communications and shall not include public safety or radio systems." Thus, network services user fees cannot be used to pay for public safety systems.

In our opinion, the microwave equipment replacement project that was funded did not directly cause the financial problems. Instead, the financial problems were due primarily to poor management practices. Two actions taken by management caused the creation and accumulation of the large cash deficit. These are (1) the decision to reduce telephone rates in 1997 and (2) the failure to bill users for more than $2.3 million in costs incurred by network services.

Management Should Develop a Plan to Avoid Problems in the Future

There are three basic options for eliminating the network services' cash deficit and resulting loan:

- **The General Assembly could forgive the $4.2 million debt** through a supplemental appropriation of capital construction or general funds. This option would provide a quick solution. The cash deficit would be eliminated all at once. However, this option would not solve CITS's financial management problems. If management does not adopt a systematic method for setting and monitoring rates and also ensure that the rates cover all costs, financial problems will continue.

- **CITS could increase its rates for network services**. This would not be a quick solution. As discussed below, CITS staff proposed a rate schedule as part of a cash flow projection that would set rates higher than market level for some services. Under this rate schedule, we estimate that it will take CITS longer to pay off the loan. Management stated that this rate schedule was not implemented, because the high rates would negatively impact user agencies' budgets. Thus, as discussed below, management implemented lower rate increases on July 1, 2000.

- **CITS could reduce it costs**. As discussed below, CITS could reduce costs through increased leasing of equipment and additional outsourcing of services.

Although there are three options, management is focusing on the first – elimination of the debt through a capital construction supplemental. However, there is no guarantee that the General Assembly will take this action. If CITS does not receive an infusion of cash through capital construction funding, it plans to raise rates to higher levels. This will result in some rates being set higher than market.

The loan will either remain the same or quite possibly grow during the next several months. CITS cannot count on the General Assembly's approval of its request for capital construction funding. It needs to immediately begin thoroughly assessing all options available for better managing the network services' finances. It should not focus on only one option. It should develop and implement an alternative plan for eliminating its cash deficit and paying off its loan in a timely manner. It should also ensure that any new rates are competitive with market levels. If rates cannot be set at competitive levels, CITS should consider outsourcing services as discussed later.

Recommendation No. 1:

The Colorado Information Technology Services should develop and implement an alternative plan (to obtaining capital construction funding for a past project) by October 31, 2000, to eliminate its cash deficit and pay off its loan with the Department of Treasury in a timely manner. The plan should address how it will:

a. Comply with state statutes by charging the full cost of telephone and data communication services to user agencies.

b. Ensure that rates charged to users are competitive with the market, as required by statute.

c. Monitor the Telecommunications Revolving Fund to ensure that it is consistent with federal requirements.

d. Make adjustments that improve financial operations in a timely manner.

Colorado Information Technology Services Response:

1.a., and 1.b. Partially Agree. The audit points out statutory requirements that GSS/CITS charge users the full cost of services and to remain competitive with private industry. These two issues are inherently contradictory. For example, private sector telephone providers can sell long distance services at a loss to gain market share, and subsidize it with other products and services with higher margins such as voice mail or internet access. The State does not have that opportunity or flexibility and as a result, puts its statutory obligations in jeopardy.

1.c. Agree.

1.d. Agree. CITS has already taken action in a number of areas beginning in February 2000. Specifically: (1) CITS negotiated and applied a credit from MCI for the National Access Fee in FY 2000 for $166,477; (2) CITS negotiated monthly savings of $63,239 or annual savings of about $759,000 with MCI based on current volumes for Fiscal Year 2001 and subsequent years; (3) CITS initiated appropriate monthly billings of over $38,500, or over $462,500 in annual billings, in Fiscal Year 2001 for areas which had erroneously been subsidized in the past; (4) CITS initiated manual billing for the appropriate charges of approximately $500,000 for ATM and SONET services in Fiscal Year 2000, to accommodate the business process changes for the new type of service, while automated billing systems were in final testing and implementation phases; (5) although as the figures for Fiscal Year 2000 are presented in the document by the audit team are noted as estimates, the following final data are available. These numbers present a much better picture than the estimates predicted, and substantiate the work mentioned above. For example, the GSS EDO financial services estimates predicted a cash deficit of $4,189,075, where in actuality, it was $3,508,251; (6) Regarding the CITS reorganization, the operational and business units were realigned in May, 2000. This was done in large part to address the fiscal and other management issues associated with the Network Services budget. Subsequently, the manager formerly in charge of that group has resigned. The new organization has consolidated all business functions in all CITS budget groups, including rate setting, billing and accounting, and budget activities.

Rate-Setting Improvements Are Needed

As discussed above, Colorado statutes require that user agencies pay for telephone and data communication services. According to Section 24-30-908(1), C.R.S.:

> Users of the department of personnel telephone and data communication services shall be charged the full cost of the particular service which shall include the cost of all material, labor, and overhead.

In other words, the fees charged by CITS are supposed to cover the costs of the services. However, we found that CITS is not complying with this statute. As shown in the chart on page 12, CITS expenditures for network services exceeded its revenues beginning in Fiscal Year 1997.

As discussed earlier, CITS began experiencing cash flow problems shortly after it reduced its telephone service rates in 1997. According to management, the main reason the rates were reduced was so that CITS could comply with the federal government's requirement that it eliminate its excess retained earnings by the end of Fiscal Year 1999 and charge rates that were not greater than service costs. Management did not monitor the impact of reducing these rates and did not change any rates until July 2000. We believe that CITS should <u>not</u> have decreased the long-distance rate for network services. Had CITS not lowered this rate, it could have avoided the major financial problems it has encountered.

During the past three years, CITS management has put too much emphasis on the federal requirements when making rate-setting decisions. Management and staff have not periodically assessed how these rates were affecting the financial and operational activities of network services. In fact, management and staff have not evaluated whether the established rates sufficiently covered all costs associated with network services. Upon eliminating the excess according to federal rules in Fiscal Year 1998, CITS should have reevaluated whether its rates were covering all costs. In addition, it should have established a structure to periodically review its rates.

CITS Did Not Charge Users for $2.3 Million in Service Costs

CITS failed to include several costs in its rates because it does not have a systematic approach for regularly assessing rates. This contributed to the violation of state statutes that require the Department of Personnel/GSS to charge users the full costs of telephone and data communication services. We found that CITS did not bill users for more than $2.3 million of network services and equipment costs incurred between June 1997 and March 2000. Instead, it absorbed these costs. Although CITS had not billed users for these costs during the course of our audit, it took steps to recover some costs in late Fiscal Year 2000 after we identified the problems. Specifically, the $2.3 million in costs not billed to users between June 1997 and March 2000 include:

- **Federal Access Charges**. Federal access charges represented more than $1 million of the identified costs not billed to users. These access charges were added to telephone users' bills after the passage of the federal Telecommunication Act of 1996. Beginning in June 1997, telephone companies began including these charges in their bills to CITS. In July 2000 CITS negotiated with the long-distance vendor for a credit of over $166,400 for federal access charges. It was also able to reduce future vendor charges for federal access fees by about $37,500 per month or $450,000 per year.

- **Asynchronous Transfer Mode (ATM) Network**. CITS used more than $800,000 of its operating revenue to establish its ATM network, which is a high-speed data transmission network that will be part of the future Multi-Use Network. Some state agencies are using the ATM network system. However, as of March 2000, CITS had not billed any users for this network. By June 30, 2000 CITS had backbilled agencies about $500,000 for ATM usage.

- **Colorado Mental Health Institute at Fort Logan (Fort Logan).** CITS underbilled Fort Logan about $390,000 from May 1998 to March 2000. In November 1997, CITS and Fort Logan agreed that Fort Logan would purchase equipment and pay installation charges in exchange for a reduced rate on phone line (local) and voice mail services. This agreement was to be effective until the costs of the equipment and installation were recovered through the rate reduction. Our review of telephone bills for Fort Logan showed that these costs were recovered by May 1998. At that time CITS should have changed Fort Logan's phone line and voice mail service rates to the regular rates. However, this did not occur because staff did not track these charges. By June 30, 2000 CITS had backbilled Fort Logan $17,000. Management estimates that annual billings for Fort Logan will be about $204,000.

- **Toll-Free Line Charges**. CITS has not passed on more than $40,000 in various toll-free line charges to users from July 1997 to March 2000. These charges include services such as installing, disconnecting, and rerouting lines.

- **Voice Mail for the Colorado Department of Education**. Although CITS had not billed the Colorado Department of Education for more than $7,500 for voice mail services for Fiscal Year 2000 by March 2000, it billed the Department $846 by June 30, 2000. CITS estimates that the annual billing to the Department will be more than $10,000.

According to staff, these costs were not included in the rates because:

- **Staff did not want to risk accumulating retained earnings that exceeded the 60-day operating reserve allowed by federal requirements**. They believed that if some of these costs were charged to users, CITS would again have excess retained earnings. However, as discussed earlier, CITS could have billed for these costs as well as not reduced its long-distance rate for network services and still have complied with federal requirements as of the end of Fiscal Year 1999.

- **Staff were unsure how to bill users for some costs.** For example, staff said they did not pass the federal access charges on to users because they were not sure how to fairly distribute these costs among users. For the ATM network, staff stated that they did not know how to read the bills from the vendor. Recently staff began meeting with the vendor to gain a better understanding of ATM bills.

- **Management and staff did not periodically review costs incurred to ensure that these costs were being recovered by user fees.** For example, staff were unaware that the rate for Fort Logan should have been increased in May 1998. As a result, CITS continued charging Fort Logan the reduced rate. In addition, staff were unaware of some of the toll-free line charges that CITS was being billed for by vendors.

CITS's failure to bill users for $2.3 million in costs significantly affected its cash flow position. It would not have accumulated as large a cash deficit had it properly billed users for these costs when they were incurred. Additionally, we estimate that CITS could have avoided $121,000 in interest charges on its Treasury loan had it billed users for these costs when they were incurred. Further, CITS has not complied with Colorado law requiring users be billed for the entire cost of the services.

CITS Has Not Clearly Defined Its Rate-Setting Approach

Recently CITS management determined that it needed to increase rates for services. Staff proposed two ways to increase rates:

- **Rate increases of 19 to 48 percent**. Staff developed a schedule of rates that they believed would produce sufficient revenue to eliminate the cash deficit in 3 ½ years. CITS planned to implement this proposal in April 2000. However, Department of Personnel/GSS management decided to delay implementing these rate increases because of concerns about the overall impact these increases would have on user agencies. User agencies might not have sufficient funding to pay the fees at the higher rates. According to staff, as a result of this concern about user agencies, CITS management decided to request a change in funding for a past capital construction project. As we mentioned earlier, CITS plans to request capital construction funds for project costs incurred from Fiscal Years 1994 to 1999 that were to be paid with revenues received from user fees. It is CITS's belief that these costs should have been fully funded with capital construction dollars.

- **Rate increases of 7 to 25 percent**. Staff developed a schedule of rates based on the premise that CITS would receive the capital construction funds for past projects. This would allow CITS to pay off its Treasury loan and eliminate its cash deficit. CITS staff believe these rate increases will produce enough revenue to cover the costs of network services in the future. CITS implemented these new rates on July 1, 2000.

The following chart compares the rate increases under the two proposals.

Network Services Rate Increase Proposals		
Service	**Rate Increase Proposals**	
	First	**Second**
Frame Relay	19%	7%
Long Distance	30%	10%
National Access Fees	Pass-through from carriers	Pass-through from carriers' itemized billing
Phone Equipment	30%	10%
Digital Data Network (includes Systems Network Architecture)	48%	25%
Microwave Voice & Data	75% Market Rate	Rates to be published on state Web site
ATM Network Infrastructure	Provider cost plus 15.58% overhead	Provider cost plus 15.58% overhead
Colorado Information Network Infrastructure Provider	Cost plus 15.58% overhead	Cost plus 15.58% overhead
All Data Circuits	Provider cost plus 15.58% overhead	Provider cost plus 15.58% overhead.
Source: Office of the State Auditor's analysis of proposed rate increases.		

Rate-Setting Approach Is Unclear

We evaluated the methodology used by CITS to develop the new rate increases for network services. Overall, we identified several problems with the rate-setting approach, including:

- **No one was able to clearly explain how the new rate increases were determined.** On several occasions we met with CITS staff to gain a better understanding of how the new rate increases were determined. Staff were unable to clearly explain how they calculated these increases. Minimal documentation existed describing the approach used.

- **Management was not involved with setting rates.** We found that one CITS staff member has been assigned the sole responsibility of projecting, setting, and calculating the rates. Management was often unaware of the way in which rates were set and the costs included in these rates.

- **Projected services usage levels were not calculated according to a systematic approach or mathematical formula.** Although staff are supposed to review service usage for the previous year annually, CITS has not developed a policy for determining how usage levels will be calculated. Because they do not have a systematic approach, staff estimate these amounts. Without a methodology to determine usage, revenue projections used to set rates will be inaccurate. Further, more frequent assessments of usage can help CITS better calculate future revenues and more accurately set rates.

- **Not all rates are competitive with the market**. Section 24-30-908(2), C.R.S., states:

  > The executive director of the department of personnel shall establish a policy of remaining competitive with private industry with regard to the cost, timeliness, and quality of telephone service or data communication functions provided by the department of personnel.

  Staff informed us that some of the new rates are not competitive with the market. For instance, staff said the rate for the digital data network is higher than the market rate. This violates the statute. However, CITS staff said that addressing the cash deficit problem is their primary concern. Setting rates to be competitive with the private sector is "secondary."

- **CITS does not account for the entire cost of capital equipment purchases in its rates for network services.** CITS staff use prior years' revenues and expenditures to set rates. We found that CITS does not include the full cost of capital equipment items in its total annual expenditures. Instead, staff use annual depreciation amounts. These amounts do not accurately reflect actual cash outflows for network services. As a result, rates set by CITS do not cover all of its costs. According to staff, the reason the depreciation amount is used is due to federal requirements concerning retained earnings. The federal government does not allow network services to entirely expense capital equipment items at the time they are purchased. Instead, the equipment must be depreciated over 15 years. Although it is important for CITS to consider the federal requirements in its decisions, it should not allow this issue to override all of its decisions when setting rates.

To ensure rates are appropriately set, management needs to address and correct the problems listed above.

CITS Should Revise Rate Setting Methodology and Review Process

It is critical for CITS to develop a systematic and accurate method for setting rates. This will ensure that rates charged to users generate sufficient revenue to cover all operating costs. Further, management and staff need to periodically assess whether the rates are appropriately set. By taking these steps, CITS can prevent future financial problems.

Recommendation No. 2:

The Colorado Information Technology Services should improve its rate-setting process and comply with state statute by:

a. Establishing and documenting a systematic approach for determining the rate structure used to bill user agencies. This rate structure should include all costs incurred, including overhead, that can be billed to user agencies as required by statute.

b. Developing a rate and cost review process to ensure that rates charged to users adequately cover the cost incurred. This process should be conducted continually and the rate should be adjusted when appropriate.

Colorado Information Technology Services Response:

Agree. Although CITS has requested an infusion of capital construction monies to offset the deficit as appropriate, it should be made clear that this option includes a modest rate increase, which was implemented July 1, 2000. Should this plan not be accepted by the budget process, the full rate increases should be implemented. We believe, however, that a capital infusion is in order, based on our analysis of capital construction funds appropriated from the user fee cash fund exempt rather than a capital construction appropriation.

From Fiscal Year 1991 through 1999 CITS was required to recover about $8.7 million through user fees for five projects: Capitol Complex Telephone System; Microwave Equipment Replacement; Asynchronous Transfer Mode; Video Conference Court System; Digital Data Network.

CITS Needs More Accurate Cash Flow Projections

CITS submitted a five-year cash flow projection as part of its Fiscal Year 2000 application for a loan with the State Treasury. CITS and Department of Personnel staff prepared this projection. However, as discussed below, we identified serious flaws with this projection. According to staff, this projection was developed on the assumption that CITS would eliminate its cash deficit within 3 ½ years. Rate increases that were to be effective as of April 2000 would have primarily contributed to the elimination of the deficit in this time period. CITS estimates that it will eliminate the cash deficit by Fiscal Year 2004.

We evaluated the cash flow projection to determine if it accurately reflects future cash inflows and outflows. Overall, we identified a number of weaknesses with this cash flow projection. These include:

- **Revenues are inflated in the projection.** These problems indicate that revenues are too high. Specifically:

  - **Rate Increase.** This projection is based on CITS's originally planned rate increase. As we mentioned above, these rate increases were at a higher level than the rate changes implemented in July 2000. As a result, all of the forecasted revenues in the projection are inflated.

  - **Digital Data Network Revenues.** According to CITS, the Digital Data Network (DDN), which is an old system, will be phased out within the next three years. Management and staff anticipate there will be a major decrease in the number of DDN users when the Multi-Use Network (MNT) system begins operating in September 2000. As mentioned earlier, MNT will eventually replace the older state networks, including DDN. This means that DDN revenues will decrease over the next five years. However, the cash flow projection shows DDN revenues increasing by more than 35 percent from Fiscal Years 2000 to 2004.

- **Multi-Use Network Revenues.** We identified problems with the Multi-Use Network revenue figures projected by CITS. Staff explained that it is difficult at this time to project these revenues because MNT has not yet been implemented. No historical revenue data exist for this network system. However, staff believe that within the next three years MNT will become the primary network system used in the State. This means that it will generate a large amount of revenue because of high-volume usage.

  Additionally, we found that the revenues estimated for MNT do not match the amount CITS has agreed to pay the vendor QWEST, to operate this system. In April 2000, CITS accepted a bid proposal from QWEST, formerly US West, to operate the MNT system for $37 million over the next five years. We compared this proposal amount with the revenues estimated in the cash flow projection and found problems. Specifically, CITS projects that it will receive $24 million in revenues for MNT for Fiscal Years 2001 to 2004. This would mean that for CITS to cover the costs of the contract with QWEST, it would need to receive about $13 million in MNT revenues in Fiscal Year 2005, or $5 million more than projected for Fiscal Year 2004. This does not appear to be realistic, because once the MNT system is fully implemented in Fiscal Year 2003, annual usage for MNT will most likely increase gradually. This discrepancy in the revenues figures in the projection indicates one of two problems. One problem may be that CITS has not accurately projected its revenues for MNT, resulting in underprojection of revenues for the first four years of MNT operation. The second problem is that CITS may not be able to generate sufficient revenues to cover the costs of the contract with QWEST.

- **Total Revenues.** According to the cash flow projection, CITS anticipates that its revenues will nearly double from Fiscal Years 2000 to 2004. Revenues will increase from $10 million in Fiscal Year 2000 to $20.7 million in Fiscal Year 2004. However, historical data from Fiscal Year 1996 to Fiscal Year 1999 show revenues ranging from $8 to $9 million. It is questionable whether CITS will experience as large an increase in its revenues over this five-year period as it is projecting.

- **CITS did not account for contingencies in its cash flow projection.** CITS has not earmarked funds for unexpected expenses. This means that if unforeseen costs are incurred, CITS will reduce its chances of paying off its loan with the State Treasury. By including a contingency category in its projection, CITS can better plan and manage its future cash inflows and outflows to ensure that it will pay off its loan in a timely manner.

As mentioned earlier, CITS plans to request capital construction funds for prior projects. If this funding request is approved by the General Assembly, then it is likely that CITS will pay off its loan and eliminate its cash deficit. However, if this does not occur, CITS will not eliminate its cash deficit in the time period it has planned in its projection. We estimate that it will take longer than CITS has projected to pay off its loan.

Staff Need to Periodically Reevaluate the Cash Flow Projection

We found that CITS staff have not modified the cash flow projection since it was prepared in January 2000. Yet changes have occurred within CITS. For example, as we discussed above, CITS accepted a proposal from QWEST to operate MNT at the cost of $37 million for the next five years. Upon receiving this information, CITS should have determined how this proposal would affect its future activities. However, CITS did not do this. In addition, the new rate changes are not reflected in the projection.

A cash flow projection can be a valuable tool in managing financial activities. However, the flaws with the current projection prohibit this from being a useful tool. To improve the projection, CITS needs to reevaluate its approach in creating and using this tool. Any problems found with the projection should be corrected immediately. Also, staff should periodically review the projection to determine whether it is an accurate reflection of future cash inflows and outflows.

Recommendation No. 3:

The Colorado Information Technology Services should improve how it projects future revenues and expenditures for network services. To accomplish this, CITS should:

a. Revise network services' five-year cash flow projection to accurately reflect revenues and expenditures.

b. Reevaluate the projection periodically to ensure the future cash inflows and outflows are correctly forecasted. Management should make needed changes to the projection and its operations based upon the results of these evaluations.

c. Reassess the viability of the proposal with QWEST to determine if revenues will be sufficient to cover costs.

Colorado Information Technology Services Response:

3.a. and b. Agree. CITS has adjusted its cash flow projection during the past several months and will continue to do so and reevaluate it on a quarterly basis.

3.c. Agree. We believe the audit to be unclear in its analysis of this aspect, that the cash flow models do positively support this project, and that the additional spending authority and related revenue collection estimates work. Nevertheless, CITS believes it is good business practice to continually analyze its cash flow projections, and therefore will reassess the Multi-Use Network for Telecommunications contract periodically with QWEST to determine if revenues will be sufficient to cover costs. Effective August 2000, GSS/CITS has assigned a position to manage all business-related aspects of the MNT project, including this issue.

CITS Should Thoroughly Evaluate Leasing Options

In order to keep up with today's fast-changing technology, CITS must constantly update its equipment and network infrastructures. As a result, acquiring and updating equipment is an ongoing process for CITS staff. We found that in recent years CITS acquired most of its equipment using cash funds. CITS spent more than $4.6 million of its operating funds on capital construction projects from Fiscal Years 1997 to 1999.

CITS management and staff believe that these equipment purchases primarily caused network services' financial problems. In recent years CITS conducted major infrastructure improvements on the State's voice, data, and video networks. CITS was required to expend large amounts of cash to purchase equipment for these improvements. Management and staff explained that it often takes several years to recover these costs through user fees. This significantly impacted CITS's cash situation.

During the audit we found that CITS has not fully evaluated its options for purchasing equipment. CITS has primarily acquired its equipment by outright purchasing it with operating revenues. It has minimally evaluated its option to lease equipment. However, with the swiftly changing technology that CITS regularly deals with, this option could greatly enhance its operational and financial activities.

According to CITS staff, if equipment has a life cycle of less than 18 months, then it may be beneficial to lease it. Because of the rapid advancement in telecommunications technology, current equipment may be obsolete within 18 to 36 months. For example, current switch equipment on the ATM system is already obsolete according to CITS management.

CITS can minimize the problems associated with purchasing equipment by reviewing its options. Leasing equipment rather than outright purchasing it can help CITS better manage its finances for network services. By leasing equipment, CITS can avoid the high costs of constantly replacing equipment. In addition, leasing can help CITS comply with federal requirements for the Telecommunications Revolving Fund because CITS can expense the costs of the lease when they are incurred. Federal regulations do not allow CITS to expense its capital equipment costs at the time they are incurred. Rather, CITS must depreciate these equipment items over a 15-year period.

Recommendation No. 4:

The Colorado Information Technology Services should reevaluate its approach for acquiring equipment for network services by assessing whether it is feasible to lease rather than outright purchase some equipment.

Colorado Information Technology Services Response:

Agree. In progress. CITS has been leasing equipment in the Data Center (GGCC) for a number of years with outstanding success, especially in terms of managing the federal fund balance issues, and is applying that business practice to other aspects of the organization. Recently, CITS has chosen the leasing option for the SNA Encapsulation project within Network Services, thus spreading $856,000 of costs over three years and making those expenses allowable for Federal Fund balance calculations. The Multi-Use Network for Telecommunications is, in essence, also a bandwidth leasing arrangement with network management and vendor-provided equipment rolled in. CITS will continue to explore this option versus outright purchase of equipment in the future.

Management Needs to Better Communicate the Purpose and Value of State-Operated Network Services

During the audit we identified several problems with the network services provided by CITS. We met with representatives from four large user agencies regarding the quality of service provided by CITS. Concerns raised by these agencies ranged from billing issues to the lack of qualified staff to address various problems that arise. Specifically:

- **All four state agencies expressed concerns with billings they receive from CITS.** For example, three agencies stated that through their own internal reviews they found that CITS was charging them for "dead lines." When the agencies placed a cancel order on lines, CITS did not remove the charge from their bill and in fact continued to charge the agencies for lines that were not in operation. The problems were not resolved until the agencies brought them to the attention of CITS. Additionally, one agency found that it was being billed for another agency's lines. Further, agencies cited that the cumbersome nature of the actual bills they receive make it almost impossible to take the time to have staff review bills for accuracy.

- **Obtaining help is difficult.** Agency representatives reported that it is often difficult to contact a CITS staff member who can help with problems. One representative said her agency's phone and data communications systems often break down, and it is difficult to contact the correct person to solve the problems.

- **No training is provided.** Four agency representatives stated that they have not received written policies, procedures, or guidelines from CITS. One agency representative stated that she has never received hands-on training on the systems her agency uses.

- **Staff are specialized and do not share information with each other.** Two agencies expressed concerns with staff who are too specialized. Representatives from these agencies reported that it is often difficult determining whom to contact when problems arise. Often, only one CITS staff member has the knowledge and expertise to solve an agency's system problems. No other staff members have the knowledge needed to address these problems. These agency representatives believe that CITS staff do not share information about agencies' systems among themselves. One agency representative believes that CITS staff are too busy to share this information.

- **Systems constantly need service.** Two agencies stated their telephone systems broke down often. Recent upgrades on one agency's system resulted in this agency's losing services it depended upon.

Outsourcing Options Should Be Periodically Evaluated

Although CITS management has recently taken actions to improve financial oversight, more needs to be done. With the various operational, financial, and customer service problems identified throughout this report, CITS should seriously explore outsourcing more of its functions for network services. This would improve the overall operations of the state network communication systems.

We found that CITS is currently outsourcing some functions within its operation such as maintaining older technology and specialized equipment. As discussed above, CITS is also outsourcing the operation of the new MNT network. However, there are other outsourcing opportunities that still exist. These include user billings and equipment maintenance. By contracting out a portion of its operations, CITS may gain access to a broader base of experience and knowledge than it possesses internally. According to a recent research study, an organization may achieve cost savings when it outsources information technology functions:

> Savings are achieved indirectly through the added flexibility that the organization gains by allowing the provider to focus on the IT [information technology] aspects of the organization's services. Ideally, outsourcing allows organizations to improve IT performance at a reasonably predictable price, to focus on core businesses, and to devote more time to strategic decision making.

The National Association of State Telecommunications Directors (NASTD) reported in 1997 that:

- **Outsourcing of some telecommunication operations is increasing nationwide**. In general, states have privatized labor-intensive functions such as data entry, claims processing, and microcomputer support. From 1989 to 1991 between 42 and 47 percent of state telecommunications budgets were spent on outsourcing. Research shows that outsourcing can be used as a long-term strategic management tool.

- **Many state telecommunications services are totally privatized**. Under this model, the state telecommunications director serves as a contract manager and service broker between the telecommunications carriers and state government client agencies.

Additionally, a 1997 NASTD survey reported that the majority of states anticipated outsourcing most of their networks by 2002. Of the 29 states responding, only two states believed they will own their own voice networks in the next five years and three states said they would own their own data networks. Colorado responded that it does outsource at an accelerated pace. Although in its survey response Colorado stated that it has an outsourcing methodology in place that continually looks for outsourcing opportunities, we did not find that this existed or was being used.

Many network services functions currently operated by CITS are prime candidates for outsourcing. Additionally, management told us that staffing levels are not high enough to perform all needed activities. Outsourcing functions such as user billings, equipment maintenance, and voice and data networks would allow CITS to reallocate staff to other important activities.

Given all of these concerns and the extensive financial problems previously noted, we question the value of CITS-run network services for state agencies. Agencies that we spoke with stated that they were unclear as to the role of CITS and the services it provides to state agencies. Additionally, concerns were disclosed that CITS does not have a complete idea of the network systems being used by state agencies. This has resulted in CITS's not always developing and implementing the best systems for user agencies.

It is important for CITS to clearly communicate its mission and roles to user agencies. Telecommunications is a complicated, technical, and dynamic area—it is changing rapidly. Governments and private organizations have found that telecommunications requires enormous monetary investments and staff with high degrees of technical expertise. Nationwide, state governments have struggled to attract and retain the staff resources needed to operate high-technology systems. Additionally, as we have shown throughout this report, CITS is lacking in its ability to effectively address the state government's telecommunications needs. Thus, it is even more important that the Department of Personnel/GSS seriously evaluate which network services activities would benefit from outsourcing, either in whole or in part.

Recommendation No. 5:

The Department of Personnel/GSS should reassess the value currently received from the CITS operation for network services and determine if any or all of it could be outsourced.

Department of Personnel/GSS Response:

Agree. CITS has clearly identified outsourcing as a viable business practice where applicable, legal, and sound. Currently, just within the Network Services budget area, CITS has outsourced some network management of its legacy systems, outsourced most telephone switch maintenance, including phone adds, changes, and deletions, and as mentioned above, has outsourced most aspects of the Multi-Use Network for Telecommunications, having the vendor supply the cabling, hardware, software, network monitoring, etcetera, all part of the bandwidth lease arrangement.

Also, it is worth noting that over the last 5 fiscal years, that is, FY 96 through FY 00, CITS has lost 28.0 FTE due to budget cuts. This represents over 10% of the current 226.5 allocated to the Division. The Network Services and Business Services for CITS are left with minimal staff to monitor charges, insure performance compliance, and implement new outsourced networks and programs through contractors providing the State services.

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