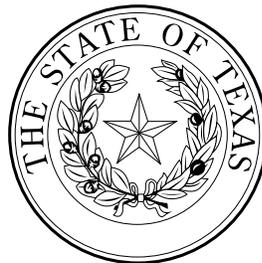


**Department of
Information Resources**

Staff Report



**Texas Sunset
Advisory Commission**

1996

TEXAS SUNSET ADVISORY COMMISSION

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In 1977, the Texas Legislature created the Sunset Advisory Commission to identify and eliminate waste, duplication, and inefficiency in government agencies. The 10-member Commission is a legislative body that reviews the policies and programs of more than 150 government agencies every 12 years. The Commission questions the need for each agency, looks for potential duplication of other public services or programs, and considers new and innovative changes to improve each agency's operations and activities. The Commission seeks public input through hearings on every agency under Sunset review and recommends actions on each agency to the full Legislature. In most cases, agencies under Sunset review are automatically abolished unless legislation is enacted to continue them.

DEPARTMENT OF INFORMATION RESOURCES

SUNSET STAFF REPORT

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EXECUTIVE SUMMARY

Executive Summary



Approach

The computer revolution came to Texas in the 1950s. Over the past 40 years, both private and public sector organizations have transformed their work and their workforces by using computer technology to accomplish their objectives. Once dominated by large mainframe computers, information technology is now characterized by a variety of technologies including personal computers, client/server networks, telecommunications, and the World Wide Web.

Texas state government has, in some instances, been at the forefront of developing information technology systems. This need for advanced technology is in response to the information intensive nature of state government and the desire to lower the cost of government operations. But like many corporations, the state has suffered the results of venturing into new territory without sufficient planning and preparation. Consequently, at times the state has spent more money than it should have and received less product and service than it expected.

In 1967, the Legislature began its efforts to contend with the challenges associated with management of information resources. Starting with the State Auditor's Office, several agencies have had responsibility for reviewing the state's expenditures for information technology. In 1989, the Department of Information Resources (DIR) was established in a comprehensive state statute that addresses the major aspects of information technology management. Since created, DIR's responsibilities have evolved. Initially created to regulate state agencies' computer purchases, today DIR focuses mainly on overseeing state agencies' planning efforts and providing them technical assistance.

Effective planning and management are key to state government's judicious use of taxpayer funds for information technology initiatives. DIR is responsible for ensuring that state expenditures are being adequately protected, that service and workforce needs are accurately identified, that state agencies create systems that work together, and the Legislature stays informed of progress on these issues.

DIR oversees state agencies' planning efforts and provides technical assistance.

The Sunset review of DIR focused on its ability to safeguard the public's investment in information resources and to assist state agencies in improving delivery of services to citizens of the state.

Review Activities

In conducting the review, the Sunset staff:

- Worked with the staff from DIR, the Legislative Budget Board, and the State Auditor's Office;
- Attended public meetings of the Department of Information Resources Board;
- Met with information resources managers at several state agencies and universities;
- Surveyed state agencies and universities to obtain information on agency satisfaction with DIR's assistance and services;
- Interviewed key data processing personnel of federal agencies and a large corporation;
- Attended a national conference of state information resources executives; and,
- Reviewed agency documents and reports, state statutes, legislative reports, previous legislation, literature on information resources technology, and other states' information.

DIR's primary activities continue to be needed to protect the state's investment in information technology.

Results

The Sunset review of the Department started with answering the threshold question of whether the functions DIR performs continue to be needed. DIR has three goals: to advise the Legislature on information resources; establish the statewide direction for information technology; and assist state agencies in managing and coordinating their information resources. The staff concluded that DIR's activities to achieve these goals should continue. The state invests a lot of money and time in information technology and risks serious problems if planning and monitoring do not accompany this investment.

Once the Department's functions were deemed necessary, the focus of the review shifted to the organizational structure used to provide these functions. DIR was evaluated to see if consolidation or transfer of all or some of its functions was warranted.

Since DIR has some functions similar to those of the General Services Commission (GSC), organizational alternatives involving this agency were carefully considered. Both the Department and GSC provide planning and assistance services to state agencies. The review concluded that the planning and assistance services provided by DIR are specialized and that an agency needs information technology expertise to provide this type of support to state agencies. DIR was found better suited to perform this function.

The review reached the same conclusion regarding the purchasing services of the two agencies. GSC is the primary purchasing agent for state agencies while DIR has one purchasing activity. The Department's cooperative purchasing program uses high-volume purchasing to drive down costs for state and local governments buying computer hardware and software. Since purchasing is limited to computer-related services, DIR has the in-house expertise to best perform this specialized purchasing function.

A second function performed by DIR that parallels functions in GSC is the provision of telecommunications services. While GSC's activities in this area primarily involve telephone services to state agencies in Austin (the Capitol Complex Telephone System) and long-distance services (TEX-AN), DIR primarily provides computer network and video teleconferencing services. The overlap of these services and the potential for closer cooperation in planning is discussed in an issue in this report.

Staff reviewed other agency activities to identify any other areas of overlap. In particular, DIR's role in approving agency information resources plans was assessed to determine if this duty would be better placed in a legislative oversight agency. The review found no duplication between DIR and either the Legislative Budget Board or the State Auditor's Office. In fact, DIR's expertise complements the activities performed by these agencies. The approval responsibility works effectively in a state agency dedicated to information resources rather than a legislative agency responsible for general oversight.

In reviewing how DIR carries out its mission, staff focused on two major aspects of its functions. First, staff reviewed the Department's ability to improve state agency planning for information resources. Second, staff assessed the Department's oversight of information technology initiatives.

In looking at state agency planning, the review focused on the current information resources planning cycle to identify changes that would improve coordination between information resources planning and the

state's overall agency strategic planning. The staff wishes to acknowledge the assistance provided by the staff of the Legislative Budget Board in developing recommendations to improve information resource planning. The review of planning also focused on the need for improved planning in the area of telecommunications and evaluated the current structure and authority of the telecommunications planning group.

In looking at DIR's oversight of information technology initiatives, the review focused on two major elements: the quality assurance process and the role of information resources managers. In recent sessions, the Legislature demonstrated an interest in more targeted oversight of information technology projects by establishing, by rider in the appropriations bill, a quality assurance team (QAT) process. The Sunset review analyzed the QAT process, the effect of having the process established by rider rather than statute, DIR's role in QAT, and the Department's statutory authority to lead quality assurance efforts in state government.

The staff recommendations are primarily changes to further improve DIR's interaction with the Legislature and state agencies.

Sunset staff also looked closely at the role of key information resources personnel in the state agencies. These individuals, designated as information resources managers (IRMs), are responsible for overseeing an agency's management of existing and developing information technology and serve as a liaison to DIR on policy and management issues.

The review also examined the current structure of DIR's board to see if its composition provided the best mix of experience and perspectives to guide the Department in accomplishing its current mission.

Throughout the review, Sunset staff held discussions with DIR, members of the Legislature, state agency personnel, the Legislative Budget Board and the State Auditor's Office. These discussions and the research by Sunset staff resulted in the following conclusions:

- DIR has been through significant changes in recent years which has helped to more clearly define its technical assistance role with specialized approval and enforcement authority aimed at helping state agencies to improve their planning and management of information technology;
- recent changes benefited state agencies and DIR, particularly in regard to streamlining agency reporting and changing DIR's focus from approval of computer purchasing to planning and management assistance;

- state agencies deserve additional time to adjust to the changes made in recent legislative sessions and become further acquainted with the improved technical assistance now available through DIR; and
- at this time, changes through the Sunset process should be primarily incremental changes to further improve DIR's interaction with the Legislature and state agencies.

The Sunset staff recommends the following changes to DIR's statute to improve the assistance it provides to state agencies and the Legislature.

Recommendations

1. Revise the statewide planning cycle for information resources management to better coincide with the state's strategic budgeting cycle.
2. Expand DIR's role in providing quality assurance assistance to state agencies.
3. Better address rapidly changing state agency telecommunication needs by focusing the duties of the telecommunications planning group.
4. Enhance the training and role of state agencies' information resources managers.
5. Restructure DIR board membership to reflect recent legislative changes in DIR's mission.
6. Continue the Department of Information Resources for 12 years.

Fiscal Impact

Although savings cannot be accurately estimated, the recommendations in this report to improve planning and management of information resources should result in long-term savings to the state. Revision of the state's planning cycle should result in more efficient planning at the agency level. More accurate projections of planning costs and project feasibility should occur with changes to the quality assurance process and improvements to the training of information resources managers. Further coordination of telecommunications planning should also increase cost-effectiveness as the state develops its telecommunications technology.

Some costs will also occur as a result of these recommendations. The recommendation to expand quality assurance assistance to state agencies will require two additional FTEs, resulting in a cost to general revenue of about \$87,183. The recommendation to enhance the training and role of information resources managers will not result in fiscal impact to DIR, but may cause some state agencies to incur additional training costs.

Fiscal Year	Total Cost to General Revenue	Change in Number of FTEs from Fiscal Year 1996
1998	\$87,183	+2
1999	\$87,183	+2
2000	\$87,183	+2
2001	\$87,183	+2
2002	\$87,183	+2

ISSUES

Issue 1



Revise the Statewide Planning Cycle for Information Resources Management to Better Coincide with the State's Strategic Budgeting Cycle.

Background

The Legislature requires state agencies to complete three major planning documents: the agency's overall strategic plan used for planning and budgeting, the agency's information resources strategic plan that lays out an agency's plan for using information resources, and the agency biennial operating plan (BOP) for information resources that provides a detailed look at an agency's operations and expenditures for information systems. The chart, *Information Resources Planning*, describes these plans.

The calendar due dates for these three plans are important to agencies because they define agency goals and strategies, determine appropriations requests, and detail operating budgets. The Legislature has established due dates for the three plans in various legislative sessions in response to the changing needs of state agencies. Consequently, two very separate planning cycles have emerged. A comparison of the two cycles can be seen in the chart, *Comparison of State Budget Cycle and Information Resources Planning Cycle*.

Information Resources Planning	
Agency Overall Strategic Plan	Developed by each state agency to provide strategic direction for all agency operations. Budget and operational strategies stem from this plan.
Agency Information Resources Strategic Plan	Demonstrates an agency's planned use of information resources to support its mission and goals. Identifies hindrances to success and assesses the agency's current information resources. The Plan is based upon DIR's state strategic plan for information resources management.
Agency Biennial Operating Plan	Details how the agency will operate, maintain, and expand its information resources. Provides schedules on projected needs, benefits, and expenditures for the last, current, and upcoming bienniums.

The chart shows that the agency overall strategic plan for budgeting and planning is submitted in June of the first year of the biennium (even-numbered years). A short time later, in August, the agency submits its Legislative Appropriations Request (LAR). This sets the appropriations process in motion.

Agencies' information strategic planning does not coincide with their overall strategic planning and budgeting.

In submitting LARs, state agencies request funds from the Legislature for information resource projects. The funds for these projects do not usually appear in the LAR as separate funding items but instead as a part of larger sums requested for agency strategies. Thus, pertinent information about projects, information needed by the Legislature, is not included in the budget request. The detailed information is available, but in other information resources planning documents. However, as the chart shows, these more detailed information resources documents are not produced during the same time period that appropriations requests are generated.

Comparison of State Budget Cycle and Information Resources Planning Cycle			
Agency Overall Strategic Planning and Budgeting Cycle	Month	Current Information Resources Planning Cycle	Changes Proposed by Sunset Staff
1996 (even-numbered years)			
	<i>February</i>	Instructions for Agency Information Resources Strategic Plans (DIR)	
Request for Revisions to Agency Overall Strategic Plans	<i>March</i>		Agency Information Resources Strategic Plans Due
Approval of Revisions to Agency Overall Strategic Plans	<i>April</i>		Approve Information Resources Strategic Plans (DIR)
Agency Overall Strategic Plans Due	<i>June</i>		Amendment to Biennial Operating Plan Due
Legislative Appropriations Request Due	<i>August</i>		Legislative Appropriations Request Due
1997 (odd-numbered years)			
Legislative Session Begins	<i>January</i>	Agency Information Resources Strategic Plans Due	Legislative Session Begins
	<i>April</i>	Approve Agency Information Resources Strategic Plans (DIR)	
	<i>September</i>	Biennial Operating Plans Due	Biennial Operating Plans Due
Operating Budgets Due to LBB and Governor's office	<i>November</i>	State Information Resources Strategic Plan (DIR)	State Information Resources Strategic Plan (DIR)
Instructions for Agency Overall Strategic Plans	<i>December</i>		Instructions for Agency Information Resources Strategic Plan

The information resources strategic plan is submitted to DIR on January 1st at the start of the legislative session. At this time, DIR reviews and approves each agency's plan looking closely for a solid approach to the continued strategic development of information technology.

The BOP, more critical to oversight of agency spending on information resources, is due 30 days after the general appropriations bill becomes law. DIR usually receives all BOPs by September following the legislative session. At this point, agencies show specifically how their legislative appropriation for information technology is being spent. The BOP explains information resources expenditures, projects that are underway, how they fit into the agency's data processing environment, and how much each is costing the state. In reviewing and approving this document, DIR is able to identify the state's highest-risk projects that may need further monitoring.

In comparing the two sets of due dates, it is clear that major differences exist. Sunset staff reviewed the planning cycles to determine whether the cycles work together sufficiently and whether the Legislature is receiving adequate information for budget decisions.

DIR completes approval of agency information resources strategic plans six months too late to be useful to the state's budget process.

Findings

- ▼ **Strategic planning for information resources does not match the time frame for the state's overall strategic planning and budgeting process.**
 - ◆ When agencies submit their information resources strategic plan at the start of the regular legislative session, DIR evaluates the plans and requests any necessary changes. DIR completes approval of all the plans about three and a half months into the legislative session. Although information resources plans should support the appropriations process, the required due date comes six months after submitting the overall strategic plan for use in the state's strategic budgeting process.
 - ◆ The statutory time frame for information resources planning does not coincide with that for overall strategic planning and budgeting. This time frame does not allow DIR to effectively assist the Legislature by providing analysis of information resources strategic plans during the overall strategic planning and budgeting process.

- ▼ **Requiring agencies to update their BOPs when requesting funds for significant technology initiatives would provide much of the information DIR needs to assist LBB in evaluating funding requests.**
 - ▶ The BOP describes the projected needs, benefits, and expenditures for information resources for the last, current, and upcoming bienniums. For example, the BOP provides detailed information such as cost-benefit analyses, project expenditures and staffing, implementation timelines, method of financing, and projected procurements.
 - ▶ Agencies generally submit their BOPs in September following a legislative session. This timing works well for current operational planning purposes, but it often fails to include information on new projects proposed in the LAR the following year. Requiring agencies to update the BOP to reflect technology initiatives in the LAR would provide the type of information DIR needs to respond to project evaluation requests.⁴
 - ▶ The statute already requires agencies to submit amendments to their BOP when making significant changes to their current biennial plans. Requiring amendments to support their legislative appropriations requests for the upcoming biennium would not greatly increase agencies' workloads.⁵

Current information resource strategic planning needs to better support the state's overall budgeting and planning process.

Conclusion

The current statutorily defined schedule for information resource strategic planning does not effectively support the state's overall strategic budget and planning cycle. The information resources strategic plans do not provide information at the appropriate time, nor do they tie into agencies' overall strategic planning processes. In addition, the lack of updates to BOPs leaves DIR without the information needed to effectively assist in the legislative appropriations process.

Recommendation

Changes in Statute

- Require agencies to submit information resources strategic plans during the first calendar quarter of even-numbered years on a date set by DIR. In addition:
 - Require the Department to approve information resources strategic plans within 90 days of submission; and
 - Remove existing provisions that set specific dates for issuing instructions and submittal of information resources strategic plans.
- Require agencies to amend their biennial operating plans when including significant new or changed technology initiatives in their legislative appropriation requests.

The changes set out above are intended to achieve two purposes. First, they will align the timing of information resources strategic planning with the overall strategic planning and budgeting process. Second, the changes will provide the information needed by DIR to effectively assist the LBB in the budgeting process. Considering the state's large investment in information resources, timely planning and submittal of information to support legislative decision-making are essential to ensure appropriate use of limited resources.

Fiscal Impact

The recommendation will not result in any immediate quantifiable savings and is not expected to increase costs to DIR or other state agencies. However, over the long term, having information resources strategic planning occur in conjunction with agency overall strategic planning should yield financial and operational benefits. Also, providing DIR with sufficient information on technology projects to effectively assist in the legislative budgeting process can help ensure that funds are spent wisely.

¹ Interview with Martin Cassano, Department of Information Resources, January 17, 1996.

² Interview with Legislative Budget Board staff, October 11, 1995.

³ Interview with Martin Cassano, Department of Information Resources, January 17, 1996.

⁴ Interview with Legislative Budget Board staff, October 11, 1995.

⁵ Interview with Martin Cassano, Department of Information Resources, November 29, 1995.

Issue 2



Expand DIR's Role in Providing Quality Assurance Assistance to State Agencies.

Background

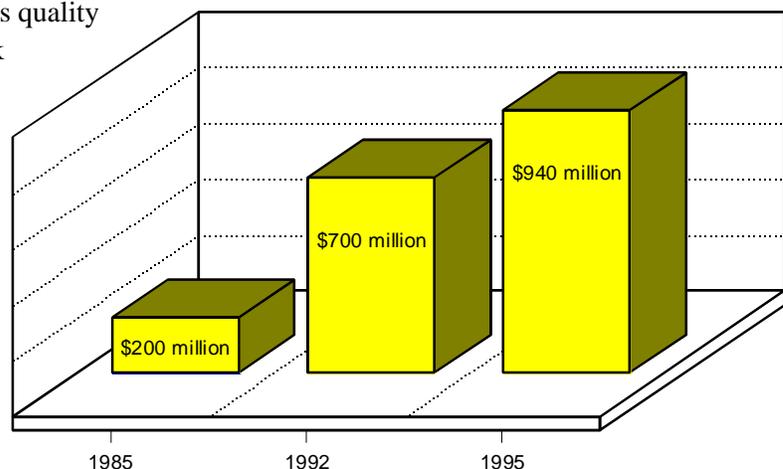
In the early 1990s, the Legislature began to change its approach to overseeing state government's information technology projects. The overall growth in state expenditures for information technology and high price tags for individual projects created concern for many state policymakers. Growth in state expenditures was significant, as demonstrated in the chart, *Texas State Government Expenditures for Information Resources*, (currently more than \$940 million).¹ The Legislature was particularly concerned about continuing to fund large appropriation requests for projects that were well past deadlines for implementation. The Legislature also became interested in more targeted project oversight.

The quality assurance process identifies project risks, ensures use of technology standards, and provides funds accountability.

Starting in 1993, the Legislature changed DIR's role from overseeing information technology purchases to project monitoring and oversight. The Legislature eliminated DIR's technology purchasing review process to reduce the Department's involvement in the day-to-day management of agencies' resources. The Legislature also streamlined burdensome reporting requirements on state agencies to provide information to DIR. Riders in the general appropriations bill required more comprehensive oversight of major information resources projects. This oversight, commonly referred to as quality assurance review, identifies project risk factors, ensures use of state technology standards, and provides funds accountability.

One of the appropriations bill riders established a quality assurance team (QAT) consisting of DIR, the Legislative Budget Board (LBB) and the State Auditor's Office (SAO) to closely monitor problematic projects.

Texas State Government Expenditures for Information Resources



QAT was given significant project oversight authority. State agencies with major projects needed approval of QAT to expend project funds, and had to undergo an independent risk analysis from outside experts at the request of QAT. Major projects were defined in riders as those with development costs over \$1 million and take one year or more to complete, involve more than one governmental agency or significantly change the agency's work or delivery of services to agency clients.

In 1995, the general appropriations bill again included the mandate for quality assurance reviews by QAT. However, LBB was no longer included, leaving DIR and the State Auditor's Office to serve on the team. The team was authorized to require project status reporting, project expenditure reporting and submission of a post-implementation evaluation report. The purpose of a post-implementation report is to determine if the project met its planned objectives. The rider added to DIR's responsibilities in regard to quality assurance by requiring the Department to provide technical assistance and by authorizing DIR to issue rules in this area.

Also, in 1993, DIR's statute was changed to require DIR's review of agency biennial operating plans to identify major information resources projects. This activity provides support to the QAT process. DIR has developed its role in quality assurance by providing further support to QAT with initial risk analysis, project plan development and review, project monitoring, risk management plan development and review, final plan review, and evaluation of project outcome measures.

The review examined the quality assurance process to determine if DIR has sufficient authority and structure to support the Legislature's directives in regard to this process.

Only 16 percent of all software development projects are completed on-time and on-budget.

Findings

- ▼ **Information technology projects, in the private and public sector, are at tremendous risk of failing or exceeding budget.**
 - ▶ Recent research on private and public sector information technology projects indicated that 31 percent of the projects will be cancelled before they are completed. Over half of all of projects will cost 189 percent of their original estimates and only 16 percent of all software development projects are completed on-time and on-budget.²

- ▼ Texas state government has a significant number of major information resources projects that are high risk and expensive.
 - ▮ In 1995, DIR initially identified 194 major information resources projects in state government. DIR screened the projects for possible risks and identified 68 as high risk projects, for further review. DIR required 33 of these projects to submit a project development plan. Based on these plans, the quality assurance team monitored the 22 highest-risk projects.
 - ▮ High-risk projects represent a considerable amount of state agency funds. With the top six projects alone, the state has committed a total of \$245 million representing 78 percent of the total amount committed to high risk projects monitored by the QAT. Failure of such projects would have major financial consequences to the state.
 - ▮ The combined total for all 22 projects is about \$313 million. The chart, *High Risk Projects Monitored by the Quality Assurance Team*, shows these highest-risk projects with their estimated dollar values.

The current top six high-risk projects total \$245 million representing 78 percent of the total amount committed to high risk projects monitored by the QAT.

High Risk Projects Monitored by the Quality Assurance Team³		
Agency Projects - Overall Total Life-Cycle Cost: \$312,618,000		
State Agency or University	Project Cost	Project Name
Dept. of Protective and Regulatory Services	\$82,410,000	<i>Child and Adult Protective Services</i>
Office of the Attorney General	\$52,428,000	<i>Texas Child Support Enforcement System</i>
Department of Transportation	\$46,656,000	<i>Registration and Title System</i>
Department of Health	\$24,385,000	<i>Intergrated Client Encounter System</i>
Texas Employment Commission	\$21,633,000	<i>Benefit System Redesign</i>
Texas Education Agency	\$17,491,000	<i>Texas School Telecommunications Access Resource</i>
Department of Human Services	\$9,211,000	<i>Electronic Benefits Transfer System</i>
Department of Public Safety	\$8,647,000	<i>Digital Image Driver's License System</i>
Department of Human Services	\$6,661,000	<i>Accounts Receivable Tracking System</i>
Natural Resource Conservation Commission	\$6,277,000	<i>Federal Clean Air Act</i>
Parks and Wildlife Department	\$6,162,000	<i>Integrated Information System</i>
Department of Human Services	\$4,648,000	<i>Child Care Management System</i>
Texas Education Agency	\$4,200,000	<i>Primary Education Information Management System</i>
Lamar University	\$3,533,000	<i>Administrative Computing Upgrade Project</i>
Department of Health	\$3,436,000	<i>Women, Infants and Children's System</i>
Department of Criminal Justice	\$3,319,000	<i>Industrial Manufacturing System</i>
Health and Human Services Commission	\$3,148,000	<i>Integrated Database Network</i>
Texas Education Agency	\$2,932,000	<i>Financial Resources Management</i>
Texas Education Agency	\$2,483,000	<i>Integrated Funds Management System</i>
Department of Health	\$1,745,000	<i>Immunization Tracking System</i>
Department of Public Safety*	\$738,000	<i>Administrative License Revocation</i>
Department of Insurance*	\$475,000	<i>Early Warning Information System</i>

*Projects originally had met the requirement for major information resources projects but costs were reduced.

- ▼ Texas and other states have experienced significant information technology problems that may have been mitigated by increased quality assurance efforts.
 - ▶ Project failure is defined as projects over budget, not completed on time, or not producing the promised benefits. Texas has experienced some projects with serious cost overruns and implementation delays. The chart, *Profile of Problem Technology Projects*, summarizes some of the most significant problems experienced by state government in Texas and other states.

Profile of Problem Technology Projects		
Agency	Project	Problems
TEXAS PROJECTS⁴		
Department of Protective and Regulatory Services	Child and Adult Protective Services Automation Project	Failed to sufficiently define costs, schedule, and projected benefits at start of project which was particularly damaging under tight implementation time frame needed for enhanced federal funding. Needed numerous contract amendments and project scope reductions resulting in schedule delays. Difficulty in obtaining consistent project information hampered funding decisions during budget deliberations.
Department of Health	Integrated Client Encounter System	Needed more accurate projection of schedule, cost, and scope of system particularly in regard to identifying needed remote sites to be served by system network. Experienced significant problems with contractors including need to remove initial contractor and hire a new contractor in the middle of the project.
Texas Department of Insurance	Early Warning Information System (EWIS)	Lack of project planning and internal project monitoring led to overstating costs and requesting project funding which was actually used for other agency automation purposes. Based on final reconstructed expenditures the department reported that actual direct expenditures for this project were only \$474,873, an amount far less than originally estimated.
Department of Public Safety	Digital Image Drivers License System	Lack of adequate project planning and project cost accounting resulted in frequent changes in reported costs for the project making it difficult to confidently determine cost/benefits.
OTHER STATES		
California Department of Motor Vehicles	Database Redevelopment Project	Failed to follow approved policies to minimize financial risk and significant chronic problems over several years caused the cancellation of the project after investing \$49.4 million. ⁵
California Department of Social Services	Statewide Automated Welfare System	Failed to set specific performance goals, establish deadlines for contractors and set fixed prices for various aspects of the project may result in the project costing \$455 million more than anticipated. ⁶
Hawaii Division of Community Hospitals	Community Hospitals' Information Processing System	Failed to follow state planning guidelines and ineffective project development and control procedures resulted in a system that has taken more than nine years to implement, cost over \$15 million, and still has significant problems. ⁷

▼ **The quality assurance review process has proven beneficial to state government and the Legislature by helping agencies to more accurately identify costs of high-risk projects.**

- ▶ QAT's annual status report to the Legislature indicates that few of the agencies with the 22 highest-risk projects accurately estimated the time needed to complete the project or the costs. In some cases, estimates changed because of factors outside the state agency's control, such as delays in federal approvals. Nevertheless, QAT assisted in significantly changing projections of technology costs.
- ▶ The report identifies reductions in costs for 11 projects with a total savings of \$33 million and total cost increases of close to \$49 million for ten projects. The examples below show that quality assurance reviews can help determine better estimates of project costs.
 - The Department of Public Safety anticipates an estimated savings of almost \$4 million below original cost estimates for its Digital Image Driver's License System. Through the QAT process, DPS identified staff reductions and ways to reduce hardware and software costs.⁸
 - The Texas Department of Health increased project estimate costs by \$9 million, for its Integrated Client Encounter System, when through the QAT process, the need for additional hardware capabilities was identified.⁹
 - The Texas Education Agency anticipates increased costs of \$7 million because of problems with the contractor hired to install the equipment for its Texas School Telecommunications Access Resources project. The QAT process helped to determine that a single contractor could not fulfill project requirements, so the agency had to award multiple contracts at the local level to get the job done.¹⁰

Quality assurance review has provided more accurate cost estimates for the Legislature.

▼ **DIR provides limited quality assurance assistance to state agencies.**

- ▶ Based on the mandates in the general appropriations bill, DIR now provides some quality assurance assistance to state agencies being monitored by QAT. DIR reports that staff support for quality assurance averages 4,400 hours per year — about two FTEs.

activities and the justification to integrate the quality assurance functions into its organizational structure remain unclear.

Conclusion

State government's large investment in high-risk information technology projects is safeguarded by the quality assurance efforts of DIR and QAT. Both have helped state agencies develop better project plans, estimate project costs more accurately, and complete projects closer to schedule. However, DIR's assistance to state agencies on quality assurance is based on a directive in an appropriations bill rider. DIR needs direction in its enabling statute to develop a comprehensive approach to quality assurance for all state agencies.

DIR needs direction in its enabling statute to develop a comprehensive approach to quality assurance.

Recommendation

Changes in Statute

- Require DIR to establish a comprehensive technical assistance program on quality assurance for all state agencies.
- Require DIR, by rule, to establish model guidelines for use by state agencies in developing in-house quality assurance procedures.
- Authorize DIR to make formal recommendations to state agencies in regard to a state agency's need to initiate quality assurance review efforts. Also, require DIR to report on state agency progress in developing quality assurance review methods in its Biennial Report to the Governor and Legislature on Information Resources Management.

This recommendation would clarify to DIR and to state agencies that quality assurance is a legislative priority and not a temporary requirement that expires at the end of the biennium. This recommendation provides DIR with clear statutory direction to assist state agencies in their efforts to ensure that information technology projects receive sufficient oversight. DIR would be able to fully develop the quality assurance approach as a standard Department function and part of its organizational structure and budget.

The Department would adopt rules to define model quality assurance methods that agencies should follow when setting up internal quality assurance reviews. These guidelines would address items such as project development plans, projected benefits, management control processes, projected budget outlay, risk analysis, outcome measures, and post-implementation evaluation report.

Fiscal Impact

Since the quality assurance process is currently saving state dollars, additional savings should be realized as DIR becomes more involved in leading agencies in quality assurance. More projects should be completed on-time and on-budget causing less money to be wasted on high-risk projects. However, an estimate of the potential savings cannot be determined.

DIR will be required to shift some of its current resources to focus on the expansion of quality assurance assistance. However, DIR will need two additional FTE's to ensure development, promotion and implementation of a more comprehensive technical assistance effort for state agencies needing help in the area of quality assurance. The additional staff will result in a cost of about \$87,183 to the general revenue fund.

Fiscal Year	Cost to General Revenue	Change in Number of FTEs from Fiscal Year 1996
1998	\$87,183	+2
1999	\$87,183	+2
2000	\$87,183	+2
2001	\$87,183	+2
2002	\$87,183	+2

¹ Department of Information Resources, *1992 Statewide Report on Information Resources Technology*, Austin, Texas, March 1993, p. 20 and Table A, p. 18., and an analysis of agency biennial operating plans by DIR staff.

² Standish Group International, Inc., *Charting the Seas of Information Technology CHAOS*, 1994, p. 2.

³ Quality Assurance Team, *Quality Assurance Team Progress Report*, December 1, 1995, pp. 8-14.

⁴ Quality Assurance Team, *Quality Assurance Review of Information Resources Projects*, January 10, 1995, pp. 11, 14, 18, 25 and *Quality Assurance Team Progress Report*, December 1, 1995, pp. 8, 10, 12.

⁵ State Auditor of California, *The Department of Motor Vehicles and the Office of Information Technology Did Not Minimize the State's Financial Risk in the Database Redevelopment Project*, August 1994, pp. S-1, S-2.

⁶ Virginia Ellis, *Los Angeles Times*, "Welfare Computer System Too Costly, State Audit Says; Government: Report Finds that Total Expense will Exceed Projects by \$455 Million and that the Equipment May Never Do All It Was Supposed To," April 19, 1995.

⁷ The Auditor, State of Hawaii, *Audit of the Information System of the Division of Community Hospitals, A Report to the Governor and the Legislature of the State of Hawaii*, October 1995, overview.

⁸ Quality Assurance Team, *Quality Assurance Team Progress Report*, December 1, 1995, p. 8.

⁹ Ibid. p. 10

¹⁰ Ibid. p. 13

Issue 3



Better Address Rapidly Changing State Agency Telecommunication Needs by Focusing the Duties of the Telecommunications Planning Group.

Background

Traditionally, the term telecommunications has referred to telephone service. Rapid advances in computer technology have expanded telecommunications to include the communication of voice, computer (data) and video information. This communication can occur by wire, fiber-optic cable or radio wave transmission. As Texas state government has taken advantage of technology advances, government has grown into an information-intensive enterprise and telecommunications has become integral to how agencies provide public services.

Telecommunications services to state agencies are divided between the Department of Information Resources (DIR) and the General Services Commission (GSC). DIR provides data and video telecommunications services to many state agencies, while GSC primarily provides voice communications.

The division of responsibilities between DIR and GSC has its roots in the creation of DIR. When the Legislature passed the Information Resources Management Act in 1989, telecommunications services were included in the definition of information resources technologies; however, those telecommunications services provided by GSC were exempted from DIR's authority. As telecommunications technology matured from simple voice transmissions to complex data and video images, DIR created a statewide telecommunications service division to provide state agencies with data network services.

To address the coordination of planning and operations among the state's telecommunications service provider and user agencies, the Legislature created a multi-agency group in 1991. This group is referred to as the telecommunications planning group (TPG) and is composed of three agencies: DIR, the State Comptroller of Public Accounts (Comptroller), and GSC. DIR is the state's lead agency for strategic planning of information resources and also a provider of data

*Telecommunications
services to state
agencies are
divided between
DIR and GSC.*

communications; the Comptroller is a major user of telecommunications through its Uniform Statewide Accounting System; and GSC is state government's primary provider of telecommunications.

In 1993, the Legislature, in two separate bills, expanded TPG to include the University of Texas System, Texas A&M University System, Higher Education Coordinating Board, and the Central Education Agency, in advisory capacities. In the same legislative session, TPG was given the task to create a comprehensive statewide telecommunications plan and report to the Governor and the Legislature before September 1, 1994.

TPG's plan evaluated the organization of the state's telecommunications and concluded that the current environment does not promote the most cost-effective means of delivering telecommunications services to state agencies. To solve this problem, TPG recommended the consolidation of GSC's and DIR's telecommunications services and planning into DIR. Although the 74th Legislature made major changes to how private telecommunications services are regulated in Texas, it did not act upon TPG's consolidation recommendation.

The review of state agency telecommunications focused on whether the problems that led TPG to recommend consolidation still exist and whether these problems can be addressed in ways other than consolidation.

The 74th Legislature did not act on TPG's recommendation to consolidate telecommunications within DIR.

Findings

- ▼ **Telecommunications is a major cost for state government.**
 - ▶ State government has invested heavily in telecommunications and future technological advances will require further commitment of resources to telecommunications activities. In fiscal year 1995, Texas spent more than \$123 million to provide communications equipment and services to state agencies.¹ A large part of this spending is controlled by GSC. GSC's annual budget for telecommunications, mostly for the state's long-distance transmission system (TEX-AN) and the Capitol Complex Telephone System, is \$45 million. This figure includes expenditures that are reimbursed by other state agencies as well as direct appropriations to GSC.²

- The statutes are also inconsistent in the functions of the planning group. One section of the statute requires DIR alone to adopt policies and standards for telecommunications. A second section provides that DIR and the Comptroller shall jointly coordinate to achieve the goal of a single centralized telecommunications network. Other sections assign the responsibility for planning the statewide telecommunications system to the group as a whole.
 - Finally, the statutes are inconsistent in the authority of the planning group. The definition of telecommunications contained in the GSC statute excludes criminal justice information communications systems from the planning group's authority. However, the version of the planning group created in DIR's statute has no such exclusion.
- ▼ **The statutes creating and directing the telecommunications planning group are incomplete.**
- ▶ Presently no requirement exists for reporting results of the telecommunications planning group or their recommendations — other than to their parent agencies.
 - The statute contained a reporting requirement for a single report to the Governor and the Legislature that was due in 1994. This requirement has expired.
 - No provision exists for an on-going analysis of changes to the telecommunications structure and reporting of this analysis to the Legislature. Not only is telecommunications a rapidly changing field, but the Legislature itself made fundamental changes to regulation of privately-owned carriers in 1995. Despite these changes and the potential for needed statutory change in the state's use of telecommunications, no mechanism exists for the group to study and present policy recommendations to the Legislature.
 - ▶ The statutes do not clearly express specific duties of the planning group. The statute's broad directives to the group do not assign regular reporting intervals, provide methods for implementation of the group's plans, or give the group a specific goal to meet in developing its plans.
 - ▶ The statutes do not give enough authority to the planning group to carry out its mission. For example, the group has

No mechanism exists for TPG to present policy recommendations to the Legislature.

plan for future use of the technology; and optimize opportunities for the state to secure the most cost-effective access to services.

Recommendation

Changes in Statute

- The structure and duties of the telecommunications planning group should be improved by:
 - Establishing the telecommunications planning group as a single entity established in a single statute with a set membership composed of the Comptroller of Public Accounts, the Executive Director of the Department of Information Resources, and the Executive Director of the General Services Commission and with the authority to elect a chair;
 - Clarifying the duties of the telecommunications planning group to require the group to make a comprehensive effort to collect and manage network configuration information about existing and planned telecommunications networks throughout the state;
 - Requiring biennial reports to the Legislature that detail the current telecommunications plan and the progress the state has made towards accomplishing its goals including recommendations for improvements;
 - Granting the group sufficient authority to require needed information from state agencies to carry out its duties; and
 - Specifying that the group must post notices of its meetings using the procedures outlined in the state's open meetings law.

Clarifying statutory requirements for telecommunications planning function would eliminate duplication and confusion. This change would allow a single group to collect and manage network information about existing and planned telecommunications networks throughout the state for more effective coordination of existing resources. The Department of Information Resources would continue to coordinate staff and administrative support of the planning group. The group should, when collecting information about existing and planned networks, make maximum use of existing reports and collect its information in a manner that is not burdensome upon agencies. The planning group would be subject to provisions requiring posting notice of their meetings and public input. The current advisory agencies to the planning group — the Central Education Agency, Texas Higher Education Coordinating Board, Texas A&M University System and University of Texas System — would continue in their current capacity.

Fiscal Impact

Continuing the planning group would not result in a fiscal impact as the staff support provided by the member agencies would continue. However, these recommendations would result in a positive fiscal impact for the state. The amount of savings cannot be determined at this time as the amount of duplication within existing projects and the number and costs of future projects cannot be estimated. Long-term savings should be achieved through improved collection and management of telecommunications information, and the resulting improvement in planning.

¹ Comptroller of Public Accounts, *1995 Texas Annual Cash Report* (Austin, Texas, 1995), p. 128.

² National Association of State Information Resources Executives (NASIRE), *State Information Resource Management Organizational Structures: 1994 NASIRE Biennial Report*, 1994 (Lexington, Kentucky, 1994), p. 42.

³ Telephone interview with Mark Ansboury, DIR Statewide Telecommunications Department Director, January 3, 1996.

⁴ Telecommunications Planning Group, *Texas Telecommunications Strategic Plan: Report to the Governor and the Legislature*, (Austin, Texas, September 1994), p. 57.

⁵ *Ibid*, pp. 10, A.83.

Issue 4



Enhance the Training and Role of State Agencies' Information Resources Managers.

Background

Texas, like many other states, is grappling with the effective use and management of information resources technology. When the Legislature passed the Information Resources Management Act in 1989, the Act included a provision requiring all state agencies and universities to designate an information resources manager (IRM). The Legislature, through mandating this agency position, increased accountability for information technology decisions and made sure DIR had a point of contact responsible for overseeing all aspects of an agency's information resources. To ensure that IRMs were adequately prepared, the Legislature also required DIR to provide a training program for IRMs.

The role of the information resources manager has become a critical aspect of managing state agency computer and data systems. IRMs are responsible for a wide range of functions: such as setting policies for computer use and security, providing coordination between an agency's data processing department and its users, and writing information resources strategic and operational plans. One primary responsibility is to develop the agency's information resources strategic plan. This plan establishes the agency's direction in developing computer and data systems, directs allocation of available resources, assesses internal and external factors that affect successful development of projects, and charts future agency information needs.

IRMs are also responsible for developing their agencies' biennial operating plan (BOP). This plan provides detailed information showing how funds will be spent. The BOP details the projected needs, benefits, and information technology expenditures for the last, current, and upcoming bienniums.

The scope of the IRM's duties depends on the business needs of the agency. In a large agency such as the Texas Department of Human Services, the IRM must not only manage the day-to-day activities of maintaining a computer network, but is also responsible for overseeing the successful implementation of large projects. In smaller agencies, the

IRMs set computer use policies, coordinate data processing activities, and develop strategic and operational plans.

IRM's duties usually are not as extensive, and center on installing emerging technologies such as small computer networks, voice mail, electronic mail, and Internet services.

Currently, the state has 148 designated information resources managers. To qualify as an IRM, the law states that the IRM must be an employee who is required to sign a state agency's information resources strategic plan. In addition, DIR rules require the IRM to hold at least a bachelor's degree. Agencies and universities are given broad discretion in determining other employment qualifications. By law, DIR is allowed to set continuing education training guidelines. However, agencies are not required to comply with these guidelines. The Department provides training and an annual IRM training conference.

The state's effective use of information resources depends heavily on the strength and knowledge of agency and university IRMs. Consequently, the review focused on their evolving role of information resource managers and DIR's ability to support and train them.

The state's effective use of information resources depends on the strength and knowledge of IRMs.

Findings

- ▼ **Information resources managers are critical to the effective management of the state's investment in information technology.**
 - ▶ IRMs are responsible for more than \$940 million in annual state expenditures on information technology.¹ Expenditures range from the purchase of computer hardware and software to the development of major computer systems.
 - ▶ The chart, *State Agency Expenditures for Information Resources* shows total information technology expenditures of the largest state agencies and universities.

State Agency Expenditures for Information Resources*			
	FY 1992-93	FY 1994-95	TOTAL
Texas Department of Transportation	\$253,078,000	\$228,548,000	\$481,626,000
Texas Department of Human Services	120,496,000	136,251,000	256,747,000
Comptroller of Public Accounts	50,807,000	102,027,000	152,834,000
Office of Attorney General	50,102,000	77,640,000	127,742,000
Protective & Regulatory Services	10,708,000	103,447,000	114,155,000
U.T. Medical Branch - Galveston	44,911,000	55,253,000	100,164,000
Department of Public Safety	59,081,000	39,148,000	98,229,000
U .T. M.D. Anderson Medical Center	50,886,000	45,357,000	96,243,000
The University of Texas at Austin	43,948,000	52,272,000	96,220,000
Texas Department of Criminal Justice	28,644,000	67,001,000	95,645,000
TOTAL			\$1,619,605,000

*Figures are estimated amounts taken from the agencies' biennial operating plans

▼ **Insufficient management expertise can lead to common problems with technology projects.**

- ▶ IRMs play a critical role in the management of agencies' computer operations, including management of computer development projects
- ▶ Without proper technical and business management training, IRMs can have difficulty planning and overseeing technology projects, resulting in higher costs and higher risk of failure. The chart, *Common Management Problems with Technology Projects*, shows some of these problems.

Common Management Problems with Technology Projects
<i>Inadequate Planning²</i>
Inadequate information resources plan
Inaccurate and untimely information provided to DIR
Projects took longer than planned or costs were more/less than planned
<i>Lack of expertise in contract management</i>
Cost estimates miscalculated, either high or low, because of reliance on consultant's estimates. ³
Contracts did not include in-house costs (such as agency staff time) of developing and operating systems. ⁴
Unrealistic personnel needs led to unreasonable expectations, missed deadlines, and use of resources planned for other projects. ⁵

▼ **DIR cannot ensure that information resources managers are sufficiently prepared or trained to manage information technology in their agencies.**

- ▶ DIR has set continuing professional education (CPE) guidelines for IRMs. IRMs are encouraged to take 24 CPE hours each fiscal year. The guidelines also recommend that IRMs report these hours to DIR.
- ▶ Although DIR is authorized to provide guidelines for IRM educational requirements, the Information Resources Management Act does not require IRMs to meet or report continuing education requirements. Since reporting is voluntary, information concerning IRMs competency levels is inadequate and DIR is unable to assess the training and preparedness of information resources managers.
- ▶ Information currently available indicates that of the state's 148 IRMs only 6 percent reported having taken the recommended minimum number of hours, 34 percent reported less than the minimum, and 60 percent did not report any CPE hours at all.⁶

Of the 148 IRMs, only 6 percent reported taking the minimum number of continuing education hours.

▼ **Private sector organizations and other governmental agencies have recognized the need for on-going training.**

- ▶ In the private sector, information technology professionals receive from five to 15 days of training per person, per year, with training budgets that approximate one percent of the organization's information technology budget.⁷
- ▶ Research from trade journals and interviews with agency IRMs indicates that keeping information resources managers and other information technology professionals up-to-date with the latest knowledge is important because data processing technology changes rapidly. In private industry and

- ▶ American Airlines, Xerox, and Kodak, all reported that their chief information officers add value to their organization by serving as a bridge between top management and line management.¹⁰ This includes advising senior management on technology issues, decisions and investments, while working with line management to design projects that accomplishes the organization's mission.
- ▶ In state government, some agencies include their information resources managers in executive management, reporting directly to the agency's executive director. Several state agencies, such as the Texas Department of Transportation and Texas Department of Human Services, adopted this approach and have had success in managing information projects.

Conclusion

Adequate management of information resources is essential to protect the state's investment in information technology. Agency IRMs are critical to the effective planning and management of technology projects. To fill this role, they must be well-trained and part of an agency's executive management team. However, DIR lacks the authority to establish a meaningful training and continuing education program to ensure that IRMs are well-trained to fulfill their responsibilities.

DIR lacks the authority to establish a meaningful training and continuing education program to ensure the competency of IRMs.

Recommendation

Changes in Statute

- Require DIR to conduct a training needs analysis of the state's information resources managers and adjust its training program based on the results of the analysis.
- Require DIR to establish mandatory continuing education requirements for information resources managers, and require IRMs to report on compliance with the requirements.
- Require each state agency to study the benefits of having its IRM report directly to executive management and report the results of the study to DIR.

- **Require DIR to report to the Legislature on the results of agencies' progress toward having IRMs as part of their executive management teams.**

In developing a training program, DIR will need to assess agency IRMs' current level of competency and their training needs. DIR's study is critical to the development of an effective state training program that fulfills the needs of large to small sized agencies. Based on the study, DIR can then set continuing education requirements that ensure IRMs are trained to deal with ever-changing information technology.

Moving IRMs into executive-level management would ensure their involvement in management decisions that affect the use of information technology. This change will also help ensure that information systems are designed to match agencies' strategic missions. Requiring DIR to report on agencies' efforts in this area will provide the Legislature with information on the commitment to this important management approach. DIR would include this report as part of their larger report to the Legislature on information resources management.

Fiscal Impact

These recommendations will not result in a fiscal impact to DIR. The Department has a training and education staff that can perform the required study, establish the continuing education program, and make the required report to the Legislature.

State agencies will incur some additional costs in complying with the requirements in the recommendations. The continuing education requirements will necessitate funding of additional training for IRMs. These costs will depend on the training mandated by DIR; therefore an estimate could not be developed for this report.

¹ Information compiled by DIR's staff from state agencies' Biennial Operating Plans, Department of Information Resources.

² Quality assurance team, Quality Assurance Review of Information Resources Projects, January 10, 1995, p. 30-32

³ Interview with Patsy Henry and Mike Leo, Legislative Budget Board, October 11, 1995.

⁴ Ibid.

⁵ State Auditor's Office review of 10 automation projects for the quality assurance team, October 11, 1994, p. 2-3.

⁶ DIR's Status Report on IRMs continuing education hours, fiscal year 1995.

⁷ Stokes, Stewart L., Jr. "Remaking the IS Staff," *Information Management: Strategy, Systems, and Technologies*. Auberach Publications, 1995, p. 7.

⁸ US General Services Administration, "1000 by the year 2000: A Program to Develop Future IRM Leaders." Washington D.C.: US Government Printing Office, 1994.

⁹ Quality assurance team, Quality Assurance Review of Information Resources Projects, January 10, 1995, p. 1.

¹⁰ US General Accounting Office, "Executive Guide: Improving Mission Performance through Strategic Information Management and Technology. Learning from Leading Organizations." Washington, D.C.: US Government Printing Office, May 1994, p. 9.

Issue 5



Restructure DIR Board Membership to Reflect Recent Legislative Changes in DIR's Mission.

Background

The Department of Information Resources is governed by a nine-member board appointed by the Governor. Three members are direct appointments. The Governor also appoints three members from a list provided by the Lieutenant Governor, and the remaining three members from a list provided by the Speaker of the House. At least one appointee from the Speaker's list must be a member of the House and at least one appointee from the Lieutenant Governor's list must be a member of the Senate. Legislative members appointed to the board serve as ex-officio voting members. In addition to the required appointments of legislators, at least one board member must be employed by an institution of higher education.

The board's duties are to establish rules for the administration of the Act, including setting technology standards to be followed by state agencies; adopting the state strategic plan for information resources; reviewing and approving the performance report on the use of information resources technologies by state government; setting policy for the agency; and hiring the executive director.

The 73rd Legislature made major changes in DIR's mission.¹ Where the agency was once involved in the review and approval of agencies' technology procurements, DIR has now been directed to take a more proactive approach to the strategic and operational planning of agency information resources. The legislation removed the DIR board from the procurement process but did not make any changes to the board's structure. The review of DIR's board structure focused on whether the current membership was best suited to guide the Department in carrying out its current statutory responsibilities.

The 73rd Legislature removed the DIR board from the procurement review process but did not change the board's structure.

Findings

- ▼ **Changes in DIR's mission have created a need for a different type of expertise on the DIR Board.**
 - ▶ As originally structured, DIR reviewed and approved state agency purchases of information resource products. This procurement review process prohibited a state agency from spending appropriated technology funds until DIR approved specific purchases. In this role, DIR performed a legislative-type function by overseeing and approving the expenditure of appropriated funds. As a result, legislative experience on the board was particularly helpful during this time.
 - ▶ The Legislature also saw the benefit of legislative experience when structuring DIR's two precursor agencies, the Automated Information and Telecommunications Council and the Automated Information Systems Advisory Council. Both of these agencies had ex-officio legislative members on their boards and were involved in procurement review.
 - ▶ In 1993, the 73rd Legislature removed procurement review and approval from DIR's responsibility and refocused the agency as the state's high-level planner for information resources and as a technical resource for state agencies. Planning for information resources clearly places DIR in a role to serve and support state agencies.
 - ▶ Although DIR still plays an important role in advising the Legislative Budget Board during the appropriations process, its new duties reduce the need for the agency to have legislative experience on its board while creating a need for a closer link to planning processes within state agencies.
- ▼ **Statutory prohibitions against having certain state agency personnel on DIR's board are no longer necessary.**
 - ▶ DIR's former role in approval of computer purchases necessitated prohibiting state agency information resource managers from serving on the board. Because the Act includes state agency directors in the definition of information resources managers, this prohibition effectively

DIR's role as the state's high-level planner for information resources places DIR in a role to serve and support, rather than oversee, state agencies.

prevents the executive directors of most state agencies from serving on the board.

- ▶ While this prohibition avoided potential conflict-of-interest that could result from state agency representatives ruling on purchasing decisions made by their own agencies, the potential conflict is now greatly reduced. Through a search of Texas statutes, staff was unable to locate any other state agency enabling statute with a specific prohibition against state agency personnel serving on its board.

▼ **Agency personnel could bring needed expertise to DIR's board and improve the Department's coordination with state agencies.**

- ▶ Unlike most state agencies, DIR does not provide services directly to the public. The Department's primary role is to oversee information resource projects of state agencies and to provide technical assistance to those agencies. However, as currently structured, the DIR board has no special expertise in the functional aspects of state agency operations, other than DIR itself.
- ▶ State agency executive directors are hired because of their unique expertise in certain fields. This expertise, combined with close knowledge of their agencies' operations, make these directors ideal candidates for membership on boards of agencies with coordination and planning duties. A statutory review found at least 55 state agency executive directors or representatives who fill ex-officio positions on other state agency boards or commissions. Examples include:
 - the Director of the Department of Public Safety, who sits on six boards of other state agencies including the Texas Board of Private Investigators and Private Security Agencies and the Texas Commission on Law Enforcement Standards and Education; and
 - the Director of Pardons and Parole Division of Texas Department of Criminal Justice, who sits on the Council for Offenders with Mental Impairments and the Council on Sex Offender Treatment.
- ▶ Major state agencies also have significant staff expertise related to information resources. For example, the Texas Department of Transportation employs 358 staff in its

The DIR board has no special expertise in state agency operations, although agencies are the Department's clients.

information system division² and spends an average of \$117 million per year on information resources.³ Bringing the insights of agencies with high levels of information resource activities to the DIR board could improve the quality of decisions that affect all state agencies.

- ▶ To improve coordination, the Legislature often provides boards that serve state agencies with representatives from affected agencies. Examples include:
 - the Records Management Interagency Coordinating Council whose members include the executive directors of DIR, the General Services Commission, and the Library and Archives Commission; the State Auditor; the Comptroller; the Attorney General; and the Secretary of State; and
 - the Toxic Substances Coordinating Committee whose members include representatives from the Department of Agriculture, Department of Public Safety, Parks and Wildlife Department, Railroad Commission, Department of Health, and Natural Resource Conservation Commission.

▼ **Most other states' boards with responsibilities similar to DIR include state agency personnel on those boards.**

- ▶ Of the 25 states with a policymaking body that has responsibilities similar to DIR's, 22 boards include representatives of state agencies.⁴
- ▶ A study of these boards reveals that the most common model for board composition is a combination of private industry personnel and state agency representatives.⁵

To improve coordination, the Legislature often provides boards that serve state agencies with representatives from affected agencies.

Conclusion

The Legislature has made significant changes to DIR's mission. Where the agency once reviewed and approved state agency technology procurements, the agency today is focused on strategic planning for information resources. This change in focus has changed the type of expertise the agency needs on its board. As the agency's former role in procurement review was an extension of the legislative appropriations process, the agency benefited from legislative expertise on its board. At the same time, the potential for conflicts-of-interest during procurement

review mandated that DIR's board not have state agency personnel in voting positions.

Today, the Department's mission has been refocused on assisting state agencies and performing strategic planning for information resources. This role no longer requires the close legislative contact the agency once needed, but does require greater input from state agencies. The Legislature has commonly placed agency personnel from other agencies on boards that need special expertise and coordination. This model is also commonly followed in other states that have boards or commissions with similar functions to DIR.

Recommendation

Changes in Statute

- **Restructure the appointment process for DIR board members as follows:**
 - Remove the requirement that the Governor appoint members from lists supplied by the Lieutenant Governor and the Speaker of the House;
 - Remove the requirement that two of the members must be legislative members; and
 - Add the directors of three state agencies to serve, on a rotating basis, as nonvoting, ex officio members.
- **Establish the selection process for the agency directors by specifying that:**
 - Directors of the Texas Workers' Compensation Commission, Department of Human Services and Texas Department of Transportation serve for two years;
 - Directors of the Central Education Agency, Department of Criminal Justice, and Parks and Wildlife Department serve for two years; and
 - Agency directors' slots rotate thereafter between the groups every two years.
- **Allow the agency directors to designate their agencies' information resources managers to represent them at board meetings.**

This recommendation would change the board's composition to six members appointed by the Governor and three nonvoting, ex officio agency representatives. This increases the Governor's direct appointments from three to six members. The Governor would continue to appoint one board member who is employed by an institution of higher education. Removing

direct legislative involvement in the appointment to and serving on the board would have little impact on the Legislature's oversight of information resource projects. Funding control is maintained through the legislative appropriation process and DIR is required to report to the Legislature on the status of agencies' technology plans and projects.

The recommendation would allow DIR to benefit from the expertise of state agencies; increase DIR's ability to coordinate information resources among state agencies; and allow agencies to have a greater voice in how DIR operates. The agencies whose directors are chosen to serve on the board are among the state agencies with the largest number of full time equivalent employees and the most significant information resources expenditures. In addition, they represent each of the major functions of state government as defined by the appropriations bill pattern as follows: the Texas Workers' Compensation Commission (general government and regulatory); Department of Human Services (health and human services); Central Education Agency (education); Department of Criminal Justice (public safety and criminal justice); Parks and Wildlife Department (natural resources); and the Texas Department of Transportation (business and economic development).

To avoid any potential conflicts-of-interest, agency representatives would serve as nonvoting members.

Rotating the six state agency representatives with two-year terms ensures that the Department gains from a variety of expertise. Although the rotation process is unusual when structuring a board's composition, it will allow a greater number of agencies to lend their experience and insight to DIR.

Fiscal Impact

This recommendation would not have a direct fiscal impact to the state.

¹ 73rd Legislature, Senate Bill 381, 1993.

² TxDOT, Information Systems Division Organization Chart, July 1995. Note that this number represents the number of staff in TxDOT's information systems division. Because TxDOT has a decentralized information resource management function, the actual number of personnel involved in information resources is much higher.

³ Information supplied to Sunset Staff by DIR in January 1996. The figure is based upon biennial operating plans submitted to DIR by TxDOT and represents an average of actual and planned expenditures for fiscal years 1994 to 1999.

⁴ Robert D. Boerner, *Effective Budgeting and Oversight for Information Technology Expenditures*, Draft ed. (National Conference of State Legislatures, July 1995), pp. 6-7, with additional research by Sunset staff, January, 1996.

⁵ Ibid.

Issue 6



Continue the Department of Information Resources for 12 Years.

Background

In 1989, the 71st Legislature extensively changed how state agency information resources are managed in Texas. The most significant provision of the new Information Resources Management Act was the replacement of the Automated Information and Telecommunications Council with the Department of Information Resources (DIR). The creation of DIR represented an important first step in the shift to emphasize planning for information resources in state agencies instead of managing information resources by controlling purchasing. In creating DIR, the Legislature found that:

- information resources residing in state agencies are strategic assets that should be managed as valuable state resources;
- timely access to information by both legislative members and executive officials requires coordination and cooperation between the branches of government; and
- state agency coordination in purchasing information technology results in maximum cost-effectiveness and use.

The 73rd Legislature took the second step by refocusing DIR on strategic and operational planning for information resource management and removing DIR's authority to approve or deny state agency technology purchases.

Today, DIR has established three primary goals to accomplish its major duties: advise the state leadership on information resources management, establish the statewide direction for information technology, and assist state agencies in planning for and acquiring technology.

In its first goal of advising the state leadership, DIR attempts to provide both strategic-level planning on the state's overall direction of information resources as well as assistance in assessing specific projects during the legislative appropriations process.

DIR's creation represented the first step in a shift in emphasis from controlling computer purchases to planning for information resources.

To perform this function, DIR publishes a statewide strategic plan for information technology and requires every state agency and university to submit a strategic plan consistent with the statewide plan. DIR also requests every state agency and university to submit an information resources operating plan each biennium. DIR studies the plans for projects that may not be justifiable, and provides input on selected projects to the Legislative Budget Board during the appropriations process. DIR uses information compiled from the agency plans to produce a state biennial information resources operating plan which is submitted to the Legislature.

DIR is also involved in another piece of planning and oversight through monitoring the quality of major information projects. As prescribed by a rider in the General Appropriations Act, DIR and the State Auditor make up the quality assurance team (QAT) which provides quality assurance reviews for selected state agency projects. QAT screens every major project for the risk of failure and chooses certain projects to monitor in an effort to ensure that projects are completed on-time, within their budgets, and deliver projected benefits. QAT reports the results of its reviews annually to the Legislature.

In pursuit of DIR's second goal, to establish the statewide direction for information technology, DIR strives to establish a cohesive set of standard technologies that work together, demonstrate and assess new developments, coordinate interagency cooperation, and establish policies for the security of information.

DIR attempts to reach its goal of assisting state agencies in planning and acquiring information technology through the provision of services to the agencies. These services, most of which are provided on a cost-recovery basis, include telecommunications, training, coordination, computer services, planning and technical assistance, and a cooperative purchasing contract program.

To justify the continuation of an agency's functions, certain conditions should exist. A current and continuing need should exist for the state to provide the functions or services; the functions should not duplicate those currently provided by any other agency; and the potential benefits of maintaining a separate agency must outweigh any advantages of transferring the agency's functions or services to any other state agency.

DIR advises the state leadership, establishes the state's direction, and assists state agencies on information resources.

Findings

▼ The three main functions of DIR — advising the leadership, establishing the statewide direction for information technology, and assisting state agencies — continue to be needed.

- ▶ DIR should continue to advise the state leadership on information resources.
 - The need for this function can be seen by recognizing the importance of technology to state government. Texas spent \$1.9 billion in the 1994-1995 biennium on information technologies.¹ As state agencies have taken advantage of improvements in technology, state government has become increasingly reliant upon information resources. Because of the large amount of state expenditures, the Legislature needs DIR's input to prevent wasteful and unnecessary state spending.
 - The need to keep the Legislature well advised on state agencies' use of information resources can be illustrated by looking at some of the problems that result from inadequate management of information systems development. Other states and the federal government have had great difficulty controlling information technology projects. The chart, *Examples of Problem Projects*, provides more detail on this point.
 - As some of the most expensive of these computer development problems were in the state of California, the summary of this experience by California assembly woman Debra Bowen,

Texas spent \$1.9 billion in the 1994-1995 biennium on information technologies.

Examples of Problem Projects	
California Department of Motor Vehicles	California's Department of Motor Vehicles spent seven years and \$49.4 million on a project to update and link computers. This project was halted when managers realized that fundamental problems existed that would prevent the system from functioning properly without the expenditure of another \$100 million. The salvage value of this investment is less than \$1 million. ²
California Lottery Computer Project	California's effort to update its lottery computers had to be halted costing some \$44 million in direct expenditures and another estimated \$113 million in lost revenue. ³
National Weather Service	Systems to improve the nation's weather forecasting originally budgeted at \$1.4 billion are now estimated to have a final cost of \$4.5 billion and to be completed five years behind schedule. ⁴
Federal Aviation Administration	The FAA's Advanced Automation System designed to replace the aging air traffic control system was cancelled in 1994 after expenditures of \$500 million had been made. Reasons for cancellation include the failure to set achievable goals, lack of competent management, and failure to effectively oversee private contractors. ⁵

is illustrative, “Legislators are, by and large, not equipped to deal in an oversight role with these large IT [information technology] systems. What happened in California until the current budget year was, a department or agency would come in during the budget process and explain about their wonderful large IT project, and since no one had a clue what questions to ask to find out what was actually going on, everything was pretty much rubber-stamped.”⁶ California has since created a stronger chief information officer position to serve in a role similar to DIR.

- While Texas has largely escaped these major failures, it has had its share of troubled projects. In recent years, DIR has tracked these projects as part of the quality assurance team (QAT) with the State Auditor’s Office. QAT is currently monitoring 22 high-risk projects with total project life-cycle costs of \$313 million. The chart, *Five Largest Projects Being Monitored by the QAT*, show more details about these projects.

Five Largest Projects Being Monitored by the QAT			
Agency	Project	Projected Cost	Projected Completion Date
Texas Department of Protective and Regulatory Services	Child and Adult Protective Services	\$82,409,432	August 1996
Office of the Attorney General	Texas Child Support Enforcement System	\$52,427,935	November 1996
Texas Department of Transportation	Registration and Title System	\$46,656,064	August 1997
Texas Department of Health	Integrated Client Encounter System	\$24,384,805	August 1997
Texas Employment System	Benefit System Redesign	\$21,632,598	August 1996

- ▼ **DIR should continue to shape the statewide direction of information technology.**
- ▶ Texas state agencies are largely free to make their own decisions about the types of technologies to purchase. Such autonomy results in the need for a single entity to ensure information systems are coordinated and compatible.
 - ▶ To provide this coordination DIR is working to establish a set of technology standards that prevent state agencies from developing non-compatible computer systems. Examples of DIR's successes in this area include:
 - coordination of Geographic Information Systems (GIS) where DIR facilitated 30 state agencies and local governments in applying for and receiving a \$6.2 million in federal, state and local funds to create an electronic base map of Texas; and
 - guidance to state agencies on disaster recovery of information resources in which case DIR created an interagency information resources asset protection council to recommend security standards for the DIR board to consider for adoption as rules.

As Texas agencies are largely free to make their own decisions on technology purchases, a single entity is needed to ensure information systems are coordinated and compatible.

- ▼ **DIR should continue to provide assistance to state agencies in planning for and acquiring information technology.**
- ▶ DIR provides assistance services to most state agencies, but the largest program is its cooperative contracts purchasing program. In this program, DIR acts as a purchasing agent for state agencies and local governments. DIR is able to obtain volume discounts on technology products by aggregating government hardware and software orders and negotiating a quantity price from vendors. Purchases have grown from \$7 million the first year to \$27 million the second year and \$46 million last year. DIR calculates that this program saved state agencies and local governments \$11 million last year.
- A second large assistance program operated by DIR is the provision of telecommunications services. Services offered by DIR include the installation and support of both video and computer networks. As part of these services, DIR operates a high-speed, fiber optic network in Austin called CAPNET. This network provides over 100 state agencies with access to

Most states have an entity serving the role DIR fulfills for Texas.

network services such as the State Comptroller's Accounting Services and the Internet.

- ▼ **While organizational structures may vary, most states have an entity like DIR that sets state information resources policies.**
 - ▶ A recent survey showed that of the 50 states plus the District of Columbia, all but seven either employ a board to serve as the state's information resources manager or have a cabinet-level chief information officer that fulfills this role.⁷

- ▼ **The review of agency functions did not show any workable alternatives for combining DIR with another agency and achieve any substantial cost savings or other tangible benefits.**
 - ▶ Placing the oversight of technology use by state agencies in a single agency ensures this function flows smoothly from setting the strategic direction to reviewing agency operational plans. Although an agency such as the General Services Commission (GSC) could perform some of DIR's functions, such as the cooperative contracts program, much of the oversight of technology use requires a specialized staff of analysts to study specific technologies and plans. These are not typical duties of GSC.
 - ▶ Since a similar number of staff would be required to perform state planning activities, little or no savings would occur from a transfer to GSC or another state agency.

As long as the state is reliant upon information resources, DIR's role continues to be needed.

Conclusion

The functions currently assigned to DIR are appropriately placed in that agency. As long as the state continues to be reliant upon information systems for governmental operations, a continuing need exists to inform the state leadership, establish the statewide direction and assist state agencies on information resources management. No other agencies were identified that could assume DIR's functions with increased benefits to the state or with significantly reduced costs.

Recommendation

Change in Statute

- Continue the Department of Information Resources for 12 years.

Fiscal Impact

If the Legislature continues the current functions of DIR using the existing organizational structure, its annual general revenue appropriation of about \$3.3 million would continue to be required for operation of the agency. DIR would also continue to need the approximately \$5 million in interagency contracts and appropriated receipts from other state agencies and local governmental entities that fund the administrative costs of operating the cooperative contracts program and the agency's other cost-recovery services.

¹ According to an analysis and compilation of agency biennial operating plans by DIR staff.

² Stephen Green, "Costly DMV system kaput — can't compute," *San Diego Union-Tribune*, May 13, 1995.

³ Virginia Ellis, "Bungling of lottery computer contract costs state million," *Los Angeles Times*, October 19, 1995.

⁴ General Accounting Office, *Information Technology Investment: A Governmentwide Overview*, July 1995, p. 14 and Office of the State Auditor, *Texas Lacks Effective Controls for Developing Automated Information Systems*, February 1993, p. 15.

⁵ Matthew Wald, "Ambitious Update of Air Navigation Becomes a Fiasco," *NY Times*, January 29, 1996.

⁶ Bob Gurwitt, "Computer Overload," *Governing*, October 1995, pp. 21-22.

⁷ National Association of Information Resource Executives, *State Information Resource Management Organizational Structures: 1994 NASIRE Biennial Report*, Lexington, Kentucky, 1994, p. 24.

ACROSS-THE-BOARD RECOMMENDATIONS

Department of Information Resources	
Recommendations	Across-the-Board Provisions
	A. GENERAL
Already in Statute	1. Require at least one-third public membership on state agency policymaking bodies.
Update	2. Require specific provisions relating to conflicts of interest.
Apply/Modify	3. Require that appointment to the policymaking body be made without regard to the appointee's race, color, disability, sex, religion, age, or national origin.
Already in Statute	4. Provide for the Governor to designate the presiding officer of a state agency's policymaking body.
Update	5. Specify grounds for removal of a member of the policymaking body.
Update	6. Require that information on standards of conduct be provided to members of policymaking bodies and agency employees.
Apply/Modify	7. Require training for members of policymaking bodies.
Apply	8. Require the agency's policymaking body to develop and implement policies that clearly separate the functions of the policymaking body and the agency staff.
Apply	9. Provide for public testimony at meetings of the policymaking body.
Apply	10. Provide for notification and information to the public concerning agency activities.
Apply/Modify	11. Require the agency to comply with the state's open meetings law and administrative procedures law.
Apply	12. Require development of an accessibility plan and compliance with state and federal accessibility laws.
Apply	13. Require that all agency funds be placed in the treasury to ensure legislative review of agency expenditures through the appropriations process.
Apply	14. Require information to be maintained on complaints.
Apply	15. Require agencies to prepare an annual financial report that meets the reporting requirements in the appropriations act.
Update	16. Require development of an equal employment opportunity policy.
Update	17. Require the agency to establish career ladders.
Update	18. Require a system of merit pay based on documented employee performance.

Department of Information Resources	
Recommendations	Across-the-Board Provisions
	B. LICENSING
Not Applicable	1. Require standard time frames for licensees who are delinquent in renewal of licenses.
Not Applicable	2. Provide for timely notice to a person taking an examination of the results of the examination and an analysis, on request, to individuals failing the examination.
Not Applicable	3. Authorize agencies to establish a procedure for licensing applicants who hold a license issued by another state.
Not Applicable	4. Authorize agencies to issue provisional licenses to license applicants who hold a current license in another state.
Not Applicable	5. Authorize the staggered renewal of licenses.
Not Applicable	6. Authorize agencies to use a full range of penalties.
Not Applicable	7. Specify disciplinary hearing requirements.
Not Applicable	8. Revise restrictive rules or statutes to allow advertising and competitive bidding practices that are not deceptive or misleading.
Not Applicable	9. Require the policymaking body to adopt a system of continuing education.

BACKGROUND

Background

Agency History

In 1989, the 71st Legislature created the Department of Information Resources (DIR) as part of the Information Resources Management Act (IRMA). The Legislature created DIR to ensure that taxpayers' money spent on computers and other technology is used in ways that improve services to citizens as efficiently as possible. DIR attempts to improve the quality and cost-effectiveness of government services through planning and coordination of information resource technologies used by state agencies.

DIR's main role is to set state government's direction for information resources management.

DIR represents the culmination of several efforts by the Legislature to manage data processing and information resources. Beginning with a division within the State Auditor's Office in 1967, four different state agencies have had this responsibility. The chart, *History of Information Resources Management in Texas*, provides detail on the evolution of this function.

DIR's main role is to set the statewide strategic direction for state government's management of its information resources. DIR does this through its biennial *State Strategic Plan for Information Resources*. This document provides state agencies and universities with guidelines for planning their use of technology.

Texas is one of 34 states with an agency dedicated to information resources planning. Eight of these states, including Texas, extend the board's authority beyond the scope of general state government agencies. In Texas, DIR's authority extends to the state's university system and judicial branch of state government, but not to the legislative branch or to local political subdivisions.

History of Information Resources Management in Texas	
1967	Systems Division created in State Auditor's Office to maintain information on data processing systems in state agencies.
1979	Systems Division given advisory function to the State Purchasing and General Services Commission on data processing procurements.
1981	Automated Information Systems Advisory Council (AISAC) established to create planning and technical guidelines, and review state agency information systems procurements.
1985	Automated Information and Telecommunications Council (AITC) replaced AISAC. AITC was responsible for developing long-range telecommunications plans, providing technical assistance services to state agencies, maintaining a central software clearinghouse, and advising on information systems procurements.
1987	AITC given approval authority over procurements.
1989	71st Legislature passed the Information Resources Management Act (IRMA) abolishing AITC and establishing the Department of Information Resources (DIR) to coordinate, direct and plan for the use of information resources technologies by state agencies and approve information systems procurements.
1991	72nd Legislature created the telecommunications planning group to develop a telecommunications operating plan for state agencies.
1993	73rd Legislature passed SB 381 removing DIR's procurement authority and streamlining reporting requirements.

Since creating DIR, the Legislature has continued to refine the state's approach to managing information resources. In 1991, the Legislature created the telecommunications planning group to develop a statewide strategic plan for all state agencies. This group originally included DIR, the General Services Commission, and the Comptroller of Public Accounts. In 1993, the University of Texas at Austin, Texas A&M University, Texas Education Agency, and the Texas Higher Education Coordinating Board were added to serve in an advisory and coordinating capacity. TPG's telecommunications strategic plan was published in 1994.

The Legislature has also taken steps to improve the state's approach to purchasing information resources technology. In 1993, state law was changed to discontinue certain operating plans and performance reports, and delete the requirement that DIR review and approve information systems purchase specifications. In its place, the Legislature established a process to review major information resources projects. A rider in the General Appropriations Act created the Quality Assurance Team (QAT), composed of representatives from DIR, the Legislative Budget Board (subsequently removed from the rider in 1995), and the Office of the State Auditor, to review major information resources projects and approve project funding.

DIR has one other function that has evolved into a significant effort and deserves mentioning. In recent years, DIR's cooperative contracts program has grown into a large purchasing agent for technology purchases. Through this program, DIR negotiates bulk technology purchases. The discounts obtained through bulk acquisitions allow state agencies and other political subdivisions (such as independent school districts, cities, and counties) to purchase computer hardware, software, or related technology at reduced prices. Although this program is not explicitly prescribed by law, DIR administers the program under its general statutory authority to coordinate information resources.

Policymaking Structure

The Department of Information Resources is governed by a nine-member board whose members serve staggered six-year terms. While all the board members are appointed by the Governor, the Lieutenant Governor and the Speaker of the House also play a role in selecting the board's members. Each submits a list that includes a legislative member from the Senate and the House, respectively. The Governor must appoint three members from each list, including a legislator. In addition, the statute requires the

In 1993, the Legislature removed the requirement that DIR review and approve individual purchases of information resources.

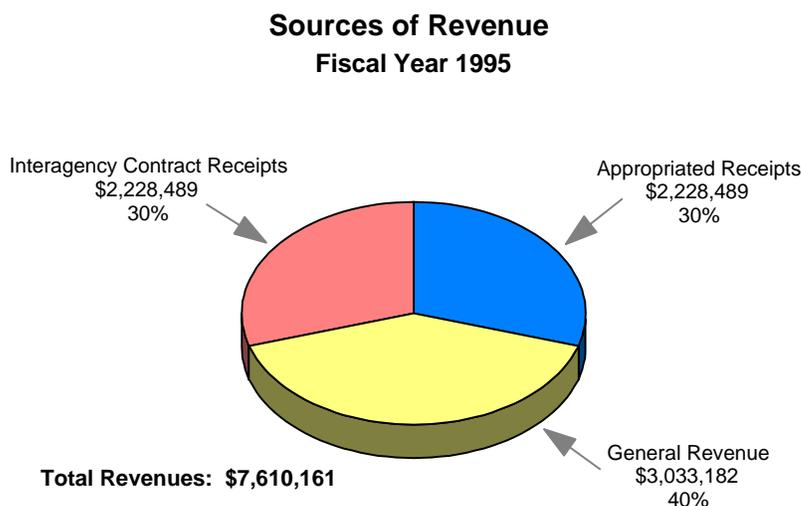
Governor to appoint one board member employed by an institution of higher education and designate the board’s presiding officer.

The Information Resources Management Act sets out four primary duties for the board: establish rules for the administration of the Act, review and approve a staff-generated performance report on the use of information resources technologies by state government, adopt the *State Strategic Plan for Information Resources*, and hire the agency’s executive director. The board also sets policy for the agency and appoints advisory committees, as necessary, to provide expertise to the agency.

Funding and Organization

FUNDING

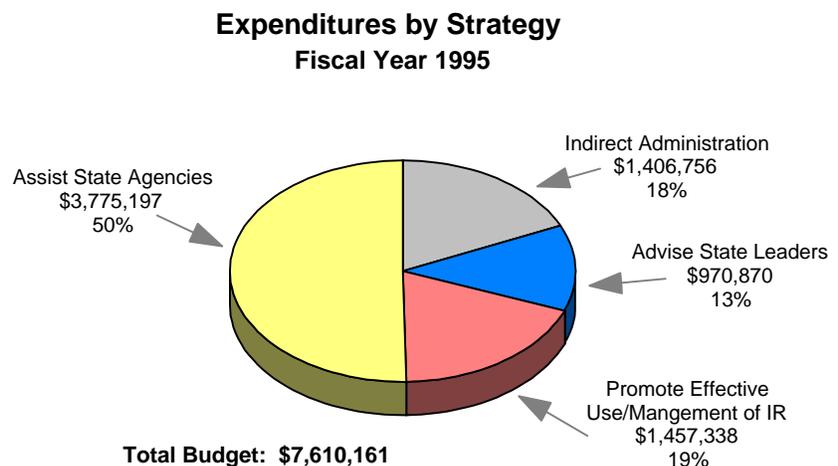
DIR is funded by the general revenue fund, interagency contracts, and appropriated receipts. The chart, *Sources of Revenue — Fiscal Year 1995*, shows the dollar amount and percentage of each funding source. General revenue supports DIR’s statutory policymaking and oversight functions such as reviewing information technology projects and developing technical standards. The Department recovers costs for providing services to other state agencies through interagency contracts and to local governments through appropriated receipts. Examples of these services include provision of telecommunication services, cooperative purchasing contracts, and computerized licensing and personnel-time accounting services.



DIR has three strategic goals: advise state leaders on management of information resources, assist state agencies, and promote effective use and management of information resources. In fiscal year 1995, DIR implemented its three strategic goals with an annual budget of about \$8.1 million. The chart, *Expenditures by Strategy — Fiscal Year 1995*, shows a breakdown of the agency's total expenditures for each goal plus a category entitled indirect administration. While this category has no direct strategy related to its implementation, it includes several miscellaneous operations such as DIR's internal computer network, publications, human resources, and executive administration.

One area of DIR activity is not set out in the Appropriations Act and therefore is not reflected as a separate item in the revenue and expenditure charts. In this activity, DIR negotiates lower pricing for bulk purchases of computer software and hardware. DIR passes through this money from the agencies and local subdivisions to vendors. However, DIR keeps an average of 2.4 percent to cover the costs of operating the program. In 1995, the total value of the contracts approached \$46 million, of which DIR retained \$1.1 million for program administration. The amount retained for administration is included in the amounts reflected on the *Sources of Revenue* chart as interagency contracts and appropriated receipts, and in the *Expenditures by Strategy* chart as the assist state agencies strategy.

The Legislature has established a statewide goal of 30 percent of all agency contracts to be made with Historically Underutilized Businesses (HUBs). The Legislature also requires the Sunset Commission, in its reviews, to consider agencies' compliance with laws and rules regarding



HUB use. The chart, *Purchases from HUBs — Fiscal Year 1995*, shows DIR’s HUB participation for 1995.¹

Purchases from HUBs Fiscal Year 1995	
Total Purchases of goods and services	\$2,857,453
Total Spent with Certified HUBs	\$453,377
Percent Spent with Certified HUBs	15.87%
Statewide Average	15.89%
State Goal	30.0%

In addition to goods and services that DIR uses in the course of its business, a high percentage of expenditures from DIR’s cooperative purchasing program are made with HUBs. However, DIR allows the purchasing entity to take the credit for most of this HUB participation. The General Services Commission has reported that, when these cooperative contracts are included with DIR’s own purchases, DIR’s fiscal year 1995 expenditures with HUBs total 73.5 percent of eligible spending.

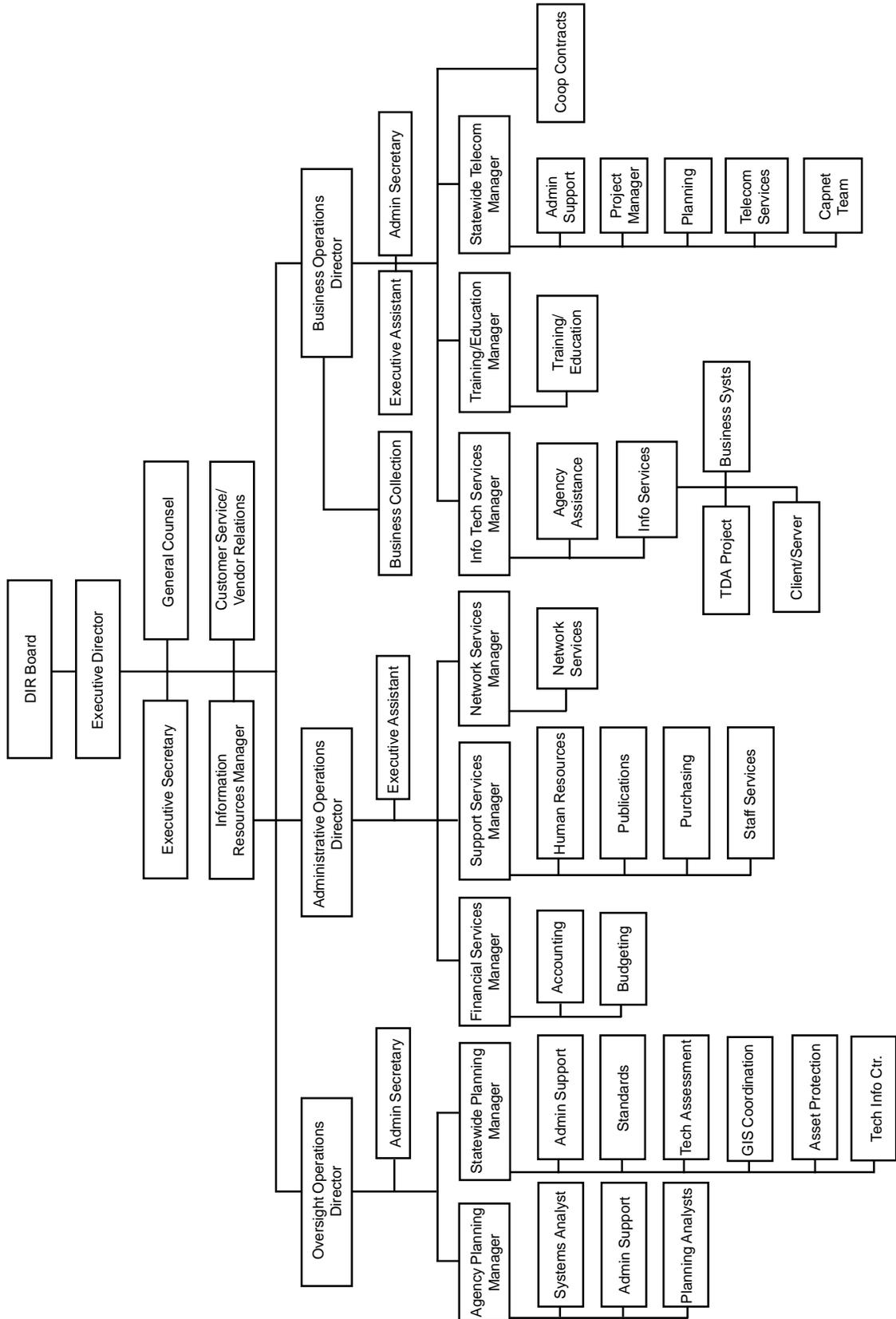
ORGANIZATION

DIR employed 111 full-time equivalent employees in fiscal year 1995. All of DIR’s employees are located at the agency’s central office in Austin. The organizational structure of the agency’s divisions is illustrated in the chart, *Department of Information Resources Organizational Chart*, on page 56. A comparison of the agency’s work force composition to the state’s minority work force goals is shown in the chart, *Department of Information Resources Equal Employment Opportunity Statistics — 1995*.

**Department of Information Resources
Equal Employment Opportunity Statistics - 1995**

Job Category	Total Positions	Minority Workforce Percentages					
		Black		Hispanic		Female	
		Agency	State Goal	Agency	State Goal	Agency	State Goal
Officials/Administration	13	8%	5%	8%	8%	54%	26%
Professional	52	2%	7%	19%	7%	46%	44%
Technical	24	8%	13%	13%	14%	25%	41%
Protective Services	NA		13%		18%		15%
Para-Professionals	NA		25%		30%		55%
Administrative Support	22	14%	16%	18%	17%	82%	84%
Skilled Craft	NA		11%		20%		8%
Service/Maintenance	NA		19%		32%		27%

Department of Information Resources Organizational Chart



Agency Operations

The Department's strategic plan has three stated goals that relate to information resources: advising state leadership, assisting state agencies, and promoting a statewide environment that encourages the effective use and management of information resources. DIR's operations to meet these goals are described in the following material.

ADVISE THE STATE LEADERSHIP ON THE USE AND MANAGEMENT OF INFORMATION RESOURCES

Texas state agencies and universities spent \$1.9 billion on information technology in the 1994 - 1995 biennium.² The Legislature has given DIR the responsibility to oversee the planning of how these funds will be used and assessing the results of the expenditures. DIR provides strategic direction, monitors agencies' planning efforts, and reports on the efficiency and effectiveness of technology expenditures. This oversight is done through an elaborate planning, review, and reporting cycle set by statute. DIR publishes two key reports to detail the direction and results of this process: the *Biennial Report of Information Resources Management* and the *State Strategic Plan for Information Resources Management*.

On November 1st of each even-numbered year, DIR submits the *Biennial Report of Information Resources Management* to the Governor and the Legislature. This report summarizes total state agency and university expenditures for information resources and recommends ways to improve the state's use of these resources. The report also outlines the state's progress toward achieving the goals set forth in the *State Strategic Plan for Information Resources*.

In the *State Strategic Plan for Information Resources*, submitted on November 1st of each odd-numbered year, DIR states a vision for the coordinated management of the state's information resources into the future and informs the Governor and the Legislature about changes needed to improve the planning for and use of information technology. For example, the 1995 plan discusses an issue important to the state — how to assure identification of individuals in governmental records that cross agency boundaries, while ensuring personal privacy. The state plan also guides state agencies in their information resources strategic planning efforts.

DIR oversees how state agencies and universities invest in information technology - \$1.9 billion in the last two years.

The State Strategic Plan for Information Resources states a vision for the coordinated management of information resources.

Oversight of Planning

DIR is the one place where all agencies' technology plans are brought together to make sure the plans coincide with the state's overall strategic direction. DIR oversees all information resources strategic planning by state agencies and universities. This strategic planning process helps agencies prepare their budgets, set performance priorities, and measure progress in achieving agency goals for using information resources. DIR's agency planning division reviews and approves these plans to ensure consistency with the *State Strategic Plan for Information Resources*. In 1995, the Department reviewed 193 agency and university information resources strategic plans.

Based on their legislative appropriations for information resources, state agencies are required to develop biennial operating plans. These plans provide details on projected needs, benefits and expenditures for the current and following two bienniums. In reviewing these operating plans, DIR determines the degree to which planned projects may run the risk of failure, recommends changes as appropriate, and can disapprove projects contained in an agency's operating plan. If disapproved, an agency may not spend money on that project. The agency evaluated 186 operating plans for the 1996-97 biennium and reduced 17 projects or plans for a total cost savings of \$100 million. DIR compiles the agency biennial operating plans into the *Biennial Report on Information Resources Management*.

Quality Assurance

Failure of a major, high-priced computer project represents a great financial risk to the state's taxpayers. In 1993, the Legislature established the quality assurance team (QAT), in a general appropriations act rider, to assist agencies in the development and implementation of proposed systems and to reduce the risks of failure. This team, now composed of DIR and the State Auditor's Office, is responsible for identifying and monitoring significant information resources projects within the state.

DIR reviews agency biennial operating plans to identify the state's major information resources projects. The criteria for identifying the major projects and other key elements associated with quality assurance are described in further detail in the chart, *Key Elements of the Quality Assurance Process*. After the major projects are identified, QAT assesses project risk through an initial questionnaire completed by each state agency. Based on reviews of the questionnaires, QAT may request a project development plan for projects it determines to have potential risks.

Key Elements of the Quality Assurance Process	
Major Project Criteria	Major information resources projects cost over \$1 million and: require a year or more to reach operational status; involve more than one agency or governmental unit; or materially alter the work methods of agency personnel and/or the delivery of services to agency clients.
Risk Analysis	<p>DIR and QAT evaluate factors that increase the possibility and the consequences of project failure. Selected factors include:</p> <p>Agency characteristics - goals, strategies, stability, policies, executive management involvement;</p> <p>Budgetary and cost considerations - budget size, cost-effectiveness, cost controls;</p> <p>User profiles - involvement, acceptance and training of users;</p> <p>Project management factors - management experience, appropriate level of authority, available staff resources;</p> <p>Project team qualities - expertise, training, productivity; and</p> <p>Technology factors - complexity, maturity of technology, vendor support, security.</p>
Steps in the Quality Assurance Process	<ol style="list-style-type: none"> 1. Project Identification 2. Initial Risk Analysis Questionnaire 3. Initial Risk Ranking 4. Determination of Need for Independent Risk Analysis 5. Determination of Monitoring Level 6. Project Development Plan Review 7. Project Monitoring 8. Final Status Report 9. Project Outcome Measure Evaluation

The project plan provides details to QAT about stages of the project’s development process, milestones to be accomplished, and how the project will be accomplished. After a plan is submitted, QAT decides whether a project requires active monitoring. Project monitoring provided by DIR staff and QAT helps agencies pinpoint areas of high risk and possible failure and address areas of concern. Monitoring may include reviewing documentation, attending status meetings, and evaluating expenditures. The chart, *QAT Workload — Fiscal Years 1994-1995*, shows the number of projects reviewed by QAT with the total value of those projects.

QAT Workload Fiscal Years 1994 - 1995	
Major Projects Meeting Criteria	194
Number of Initial Risk Analysis Questionnaires Reviewed	68
Projects Monitored	22
Dollar Value of Monitored Projects	\$313 Million

QAT submits an annual status report to the Legislature. This report provides detailed information on the projects with the highest risks of failure. The report also makes recommendations to the Legislature on improving the quality assurance process and state agency projects.

DIR provides technical assistance to agencies for each area of the quality assurance process, including work-flow analysis, current technology evaluations, project cost estimates and plan developments, and contract negotiations. DIR also provides support staff for QAT meetings, project tracking, and report production.

ASSIST STATE AGENCIES IN THE USE AND MANAGEMENT OF INFORMATION RESOURCES

To fulfill this goal, DIR acts as a computer consultant and purchasing agent for state agencies, local governments, and universities. DIR assists state agencies in the use and management of information resources by offering a variety of fee-based computer and data services. These services range from providing technical assistance on major information resources projects to negotiating computer hardware and software purchases. DIR charges fees to cover the cost of providing the service. All cost-recovery activities performed by the Department's business operations division. These include consulting and technical assistance, computer services, training, coordination, telecommunication services, and cooperative contracting. The following sections provide detail on each service area.

DIR acts as a computer consultant and purchasing agent for state agencies and universities.

Consulting and Technical Assistance

DIR's information technology services (ITS) section provides consulting assistance in areas such as contract management, project management, and strategic planning. ITS also does needs assessments and feasibility studies to determine whether agencies and local governments should pursue a particular information resources project. DIR's consulting services are most commonly used by small and medium-sized agencies and local governments. Larger state agencies commonly purchase consulting services from private consulting firms for their major projects.

In fiscal year 1995, DIR provided technical assistance services to 21 agencies. For example, DIR assisted the State Office of Administrative Hearings with a strategic information plan to help lay the foundation for the agency's future systems. A Sunset staff survey of 49 state agencies showed that many of the respondents did not know about DIR's technical assistance services.³ The respondents that used these services rated them as fair.

Computer and Information Services

In addition to consulting, DIR offers computer services such as licensing, personnel time reporting, and fund accounting services to over 50 state agencies. The Department has contracted out the operation of its computer system on which these programs run. DIR programmers and analysts also design and maintain customized computer systems for some 22 agencies. All computer programming, maintenance, and processing services are provided on a cost-recovery basis.

DIR's primary customers for these services are smaller agencies such as licensing boards. Some of the agencies using DIR's services for personnel time accounting include the Board of Vocational Nurse Examiners, the State Preservation Board, and the National Guard Armory Board. Agencies for which DIR has designed custom computer applications include the Texas Department of Agriculture (for which DIR provides all applications development and support services), the State Office of Administrative Hearings, and the Texas Commission on Offenders with Mental Impairments.

Information Resources Training

DIR offers computer training to state agencies and local governments. The Department does not have its own trainers, but promotes and coordinates training. DIR negotiates low-cost contracts with private sector firms to provide a wide range of training courses from personal computer training to grant writing. The large number of state employees participating in these courses allows DIR to obtain low cost training programs. While any state agency can send its employees to DIR-sponsored training, the primary customers are smaller agencies that lack formal training programs. In 1995, 118 state agencies and 94 other governmental, nonprofit, or private entities sent 6,159 employees to training arranged by DIR.

In addition to computer training for state employees, DIR is required by statute to provide information resources management training and establish continuing education guidelines for information resources managers (IRMs). Each state agency and university must designate an IRM who is responsible for developing the agency's information resources strategic plan. This plan establishes the agency's direction in developing computer and data systems. The IRM is also responsible for developing the agency's biennial operating plan. This plan provides detailed information to the Legislature and DIR showing how funds will be spent on information resources. In many agencies, the IRM is also responsible for operating computer networks and data systems.

A Sunset staff survey showed extensive support for DIR's IRM training program.

In 1995, DIR conducted training for 65 IRMs. A Sunset staff survey of 49 information resources managers showed satisfaction with DIR's IRM training program.⁴ In addition, the Department established continuing professional education (CPE) guidelines for IRMs to take 24 CPE hours each fiscal year. The guidelines also recommend that these hours be reported to DIR. IRMs can complete this requirement by attending qualified educational events such as seminars, forums, and conferences. IRMs are also awarded CPE credit for participating in activities that contribute to the profession such as speaking at conferences or publishing articles in professional journals.

Telecommunications Services

DIR's statewide telecommunications section provides network telecommunication services to agencies on a cost-recovery basis and planning services for the state's telecommunications system supported primarily by general revenue.

Services provided by DIR include the installation and support of both video and data networks. As part of these services, DIR operates a high-speed, fiber optic network in Austin called CAPNET. This network provides state agencies access to network services such as the State Comptroller's accounting services, as well as the Internet. Over 100 agencies and universities currently use CAPNET.

Other network services provided by DIR include designing and supporting local-area and wide-area computer networks, and video teleconferencing services for state agencies. The main customers for these services are agencies and universities that have found it more cost-effective to share networks than to build their own networks. In 1995, DIR provided video network services to more than 20 agencies and universities.

The planning services performed by the statewide telecommunications section include the development, support, and implementation of the statewide telecommunications plan and the development of pilot projects for the state's telecommunications network, TEX-AN. DIR fulfills the planning role primarily through its participation as a member of the telecommunications planning group (TPG). TPG is composed of DIR, the General Services Commission, and the State Comptroller of Public Accounts. TPG is responsible for strategic and operational planning for state government's use of telecommunications.

DIR fulfills its telecommunications planning role primarily through its participation in the telecommunications planning group (TPG).

Cooperative Contracting

DIR's cooperative contracts program strives to save money for state agencies and other governmental entities by obtaining discount prices from private vendors for computer hardware, maintenance, and software products. DIR obtains lower prices for computer goods and services by combining the purchases of various agencies into large bulk orders. This cooperative purchasing strategy allows agencies with small orders to purchase equipment and software at volume discounts. DIR is not mandated by statute to provide this service, but state agencies and local government entities, such as school districts and cities, benefit by receiving lower technology prices.

In fiscal year 1994, cooperative contracts totaled more than \$27 million in business. DIR indicated that sales increased to \$46 million in fiscal year 1995 with 150 agencies and 700 local governments participating in the program. A survey by Sunset staff showed a majority of state information resource managers favored this service.⁵ Due to the rapid growth of this program, DIR is considering contracting the administrative aspects of the program, such as billing and collections, with a private company. However, DIR staff would continue to negotiate and monitor the purchasing contracts.

DIR's cooperative purchases for agencies and local governments totaled \$46 million for 1995, up from \$27 million the previous year.

PROMOTE A STATEWIDE ENVIRONMENT THAT ENCOURAGES EFFICIENT USE AND MANAGEMENT OF INFORMATION RESOURCES

One of DIR's strategic goals is to encourage state agencies to invest in information technology that is cost effective, efficient, and useful for the operation of state government. DIR fulfills this goal by establishing information technology standards, coordinating statewide technology projects, and assessing information technology. These activities are described below.

Technology Standards

DIR sets technical standards for two main reasons: to try to get agency systems to work together and to keep money from being spent on ineffective approaches to system development. Technical standards address issues ranging from establishing compatible video teleconferencing networks to security and disaster recovery standards. DIR also sets standards to prevent state agencies from investing in technology that duplicates that of another state agency. For example, Texas universities are developing video teleconferencing systems. If universities invest in compatible systems, they can more easily have video teleconferences with each other. Disaster recovery planning standards

help agencies develop effective recovery plans so their computer systems can operate following a disaster. Information security guidelines help safeguard important data from disclosure and alteration.

Statewide Technology Projects

DIR has the responsibility to coordinate efforts of multiple agencies, working on similar projects, into one collective effort. One such effort has been coordinating the development of geographic information systems (GIS). For the GIS electronic mapping project, DIR coordinated the independent efforts and resources of 30 different agencies into one collaborative effort. This effort resulted in securing federal, state, and local commitments of over \$6.2 million, and a system that coordinates computerized mapping capabilities among state agencies.

DIR also coordinates disaster recovery planning for many state agencies. This program is intended to reduce the loss of critical services to Texans by protecting the information resources necessary for the continuation of state government following a disaster. DIR assists agencies in their efforts to implement a program that recovers vital information in the event of a disaster. DIR is responsible for coordinating the use of the state's disaster recovery operations center in Austin used by all state agencies. DIR will contract out the operation of a second disaster recovery center, currently under construction in San Angelo and scheduled for completion in 1996. Both centers will be used by state agencies and universities for disaster recovery testing and services. Disaster recovery testing evaluates agencies' abilities to resume computer operations following a disaster.

Information Technology Assessment

As required by statute, DIR operates a State Technology Assessment Center (STAC) that evaluates information technologies for usefulness to state agencies. DIR tests technologies, such as computer operating systems and Internet services, and then establishes standards and policies relating to their use. For example, DIR has established a publicly accessible World Wide Web site (Texas Information Highway) on the Internet for state government services. The Texas Information Highway has been increasingly used by the public and was accessed more than 740,000 times in December 1995 alone.

State agencies can use the STAC, free of charge, to test products and concepts before making computer purchases or completing systems designs. However, agencies that need significant DIR staff services use them on a cost-recovery basis. In fiscal year 1995, approximately 13 state agencies used STAC services.

¹ General Services Commission, *State of Texas Annual Historically Underutilized Business Report for Fiscal Year 1995: Affirming Tomorrow Through Action Today*, (October 1995), p. 7.

² According to an analysis of agency biennial operating plans by DIR staff.

³ Sunset review questionnaire on the Department of Information Resources, conducted December 1995.

⁴ Ibid.

⁵ Ibid.

DEPARTMENT OF INFORMATION RESOURCES

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