
# Lonestar Education And Research Network (LEARN)

***Report to the State of Texas***
***Department of Information Resources (DIR)***
***and***
***Office of the Governor***

*September 2006*

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# Executive Summary

LEARN is an organization dedicated to providing high performance networking for Texas' higher education community. This year LEARN completed its first Strategic Plan to focus its goals; guide its decisions and program development; identify measurement techniques and customers; clarify its mission, services and products; and establish a framework for costs and rates.

Education is driven by science and learning, but enabled by technology. LEARN will provide the advancing cyberinfrastructure to support the innovations and efficiencies of research collaboration to lead the transformation of education and research in Texas in the 21st century. The guiding principles of LEARN are to provide collaboration among Texas higher education institutions and partners, contribute through partnerships to the overall knowledgebase for higher education and universities with large research missions, and provide next generation network accessibility.

LEARN has continued to expand and complete key segments of its network. LEARN has increased bandwidth, route miles and members connected. During the last year, LEARN has added almost 1,000 route miles, connected eight more members and expanded bandwidth by a factor of two. These metrics are constantly growing and are detailed in this report.

Audited financial reports for 2004 and 2005 are included with this report as appendices. The financial representations in this report detail activity from January 2006 up to the most current information available to date (July 2006). Categories of expenses, income and other financial details are shown as figures in this report. A complete financial report fully encompassing 2006 will be included in the annual report, available in early 2007. This document fulfills our agreement with the State of Texas to provide a report in September of each year. In addition, LEARN will produce a more comprehensive annual report at the end of the calendar year.

Learn's initial Strategic Plan is included in the appendices of this report and reflects the continued value toward infrastructure development and advances in research and technology enabled through LEARN. LEARN's progress in expansion of the network and measures of performance are described in this document. Given the increased dependence of all public and private sectors on the internet and communications technology, LEARN is poised to exit 2006 a stronger and more robust entity on which to expand Texas' education, research, health care and public service needs of the state.

## Introduction

The Lonestar Education And Research Network (LEARN) is a cooperative effort of 33 institutions of higher education across the state of Texas. LEARN provides high-speed connectivity among member institutions and provides the cyberinfrastructure for connection to research networks throughout the world in support of higher education's research, teaching, health care and public service missions. The LEARN network enhances Texas' research competitiveness, the state's economic position and provides next-generation, cost-effective data communications. The LEARN network enables effective education of students around the state, enhances faculty collaboration and innovative research and aids scientists in technology development.

## Mission

LEARN is a non-profit collaboration of Texas higher education institutions that supports their research, education, health care, and public service missions through the innovative development, operation and utilization of advanced statewide networking, access to global resources and related services.

## Objectives

The objectives of LEARN are to:

- Facilitate research among the participants to leverage assets and promote the establishment of partnerships among diverse educational organizations.
- Develop a fiber network that will provide a virtual environment for real-time collaboration to facilitate communication, share data, and utilize video for real-time activities in research, education and health services.
- Provide advanced network, pre-market technologies to the member organizations.

## Vision

LEARN is committed to becoming the premier organization to provide network services for research, education, health care and economic development through advanced communication services throughout Texas. LEARN will be a national model for organizations that serve institutions of higher education. LEARN will provide leadership in creating global networking initiatives.

## Guiding Principles

The three guiding principles that determine the services that LEARN will provide include:

- Collaboration – One of the primary missions of LEARN is to facilitate collaboration among Texas higher education institutions and partners
- Knowledge – With the promotion of collaboration between the Texas higher education institutions and partners, there will be an increase in knowledge that will contribute to the overall knowledge base for higher education and universities with significant

research missions

- Technology – To be able to promote large-scale collaboration and knowledge, LEARN must provide next-generation network accessibility.

## Relationships with Providers

LEARN is unique in providing state-wide, fiber-based next-generation networking services to its member organizations, however, other communications service providers exist within the state. LEARN works in cooperation with other research and education networks in Texas and works in concert with a number of private sector providers for last-mile access.

### Public Sector Providers

The University of Texas System Office of Telecommunication Services (OTS) acquires both production and research bandwidth from LEARN. OTS continues to migrate services to the LEARN network. OTS expects to use LEARN to provide connection among shared regional data centers in Houston, Arlington and Austin. OTS also provides the 10 Gigabit connection over LEARN infrastructure to the Texas Advanced Computing Center in Austin.

TTVN is the wide-area data and distance learning network for institutions, agencies and affiliated organizations of The Texas A&M University System. It is managed for the System by Texas A&M University in College Station. TTVN currently utilizes the LEARN optical backbone for the core of its statewide network IP backbone infrastructure. Future use of LEARN provides National Lambda Rail (NLR) connectivity to Texas A&M University System institutions.

The Northeast Texas Consortium of Colleges and Universities (NETnet) is the collaborative effort of 15 higher education institutions to bring a wide range of instruction to 50 rural northeast Texas counties containing 46 percent of the rural Texas population. The Northeast Texas Consortium is based at The University of Texas Health Science Center at Tyler. As a participant in LEARN, the Consortium will act as a network hub for the region, distributing connectivity via NETnet to each of its college or university sites.

The Southeast Texas GigaPOP, in the Houston metropolitan area, provides efficient, cost-effective, collaborative and useful networking infrastructure to support the academic and research mission of the connecting institutions. The network infrastructure provides an aggregation point for member organizations to connect to Abilene for Internet2 resources and establishes a foundation for collaborative education and research initiatives. Members of the Southeast Texas GigaPOP participate in RENoH, a University of Houston lead initiative, that provides multiple fiber connections throughout the area through a partnership with Abovenet.

The North Texas GigaPOP, in the Dallas/Ft. Worth area, is an aggregation point for high-speed data networking in the arena of higher education and academic research. It is a cooperative association of research-oriented institutions for the purpose of sharing connections to high-speed networking resources with its membership.

The state of Texas, through its Department of Information Resources (DIR), provides a variety of services to state-supported institutions. As part of the formal agreement with the State, LEARN may provide new or make available existing capacities to DIR at such rates as may be mutually agreed. DIR may gain access to LEARN's infrastructure for the purpose of providing services, where appropriate and cost-effective, for its statutorily designated constituency.

Texas Education Telecommunications Network (TETN) is a private video/data network

among the 20 Texas Education Service Centers (ESC) and the Texas Education Agency (TEA). TETN provides a centralized video network to its 21 members and also serves as the primary path for school district video traffic moving between the ESC regional networks. It is expected that TETN and the 20 ESC regional networks may use LEARN's backbone infrastructure to create a K-12 intranet among their school districts. By forming an intranet across the State, ESCs will gain access to broadband infrastructure needed for future growth of internet usage, online testing and demands for electronic instructional materials. ESCs will eliminate redundant connections to higher education institutions and begin planning collaborative projects that support exponential growth of network usage in school districts.

**National Networks**

LEARN is an affiliate member of Internet2. At present, LEARN does not directly provide connection to Abilene, the Internet2 network, although the LEARN infrastructure is being used by member organizations to access that network. Internet2 will be decommissioning its current Abilene research and education network in mid-2007 and be replaced by a new, next-generation infrastructure (currently known as NewNet). LEARN will be the aggregator for Texas's Internet2 members into NewNet, condensing the current four aggregators into one.

LEARN is a charter member of the NLR and has committed funding over five years to its creation. At present, NLR has a full-service node in Houston, and some services available in Dallas, San Antonio and El Paso. LEARN shares collocation space with NLR along its Houston to Dallas path and leases a 10 gigabit service from NLR between San Antonio and El Paso. Contributing LEARN members are beginning to make use of this emerging network through the LEARN point-of-presence in Houston.

## Related Activities – 2006

**TAMU Participates in the OptIPuter Project**

- The Computer Science Department at Texas A&M is a member of the OptIPuter project utilizing the LEARN network. The OptIPuter is a five-year, $13.9 million, National Science Foundation funded project to interconnect distributed storage, computing and visualization resources using photonic networks. The main goal of the project is to exploit the trend that network capacity is increasing at a rate far exceeding processor speed, while at the same time plummeting in cost. This allows one to experiment with a new paradigm in distributed computing –– where the photonic networks serve as the computer's system bus and compute clusters taken as a whole, serve as the peripherals in a potentially, planetary-scale computer. The project focuses on distributed visualization and collaboration applications for a bandwidth-rich environment. Without the high bandwidth connection to research networks provided through LEARN, participation in this project would most likely be cost prohibitive. LEARN is used to connect the National LamdaRail (NLR) FrameNet to connect to Chicago.

**TTVN Completes First Year of Utilizing the LEARN Backbone**

- Trans-Texas Videoconference Network (TTVN) completed its first full year of utilizing the LEARN backbone. The transition went very well, and eliminated all

bandwidth bottlenecks at each of the system campuses. Most campuses had less than 12 megabits of bandwidth before the transition. Today each has at least 45 megabits, and the bandwidth can easily be increased as needed. In College Station, the Texas A&M campus now has a full gigabit of bandwidth.

**LEARN Transmission of HDTV to TTVN Conference**

- LEARN transmitted an HDTV interaction to Texas A&M's annual TTVN Conference. The network allowed Texas A&M to move a high definition signal from television studios in College Station to the Galveston campus. They broadcast by Cisco wireless technology to Moody Gardens. The Chancellor of the TAMU System gave a welcoming address, they had a "weather forecast" from around the TAMU System, and there was a compelling flute lesson between an instructor on the stage in Galveston and a student in College Station.

**LEARN HD videoconferencing**

- LEARN's bandwidth enables Texas A&M's HD videoconferencing from their campus in College Station to their campus in Doha, Qatar. Sufficient bandwidth from the College Station campus to their Internet2 access point in Houston now enables the HD videoconference to move from College Station, via LEARN, to Abilene, and on to Doha, Qatar, via Internet2.

**Texas Digital Library collaboration**

- LEARN is enhancing the Texas Digital Library collaboration by enabling a "private network" among participating LEARN schools. Project members include The University of Texas, Texas A&M University, the University of Houston, Rice University and Texas Tech University. ( www.tdl.org )

**TAMU's Internet2 Technology Evaluation Center (ITEC) Collaboration**

- Using LEARN's connectivity with national research networks and its presence in commercial POPs, Texas A&M's Internet2 Technology Evaluation Center (ITEC) has collaborated with the other three ITECs in a project comparing performance of Internet2's Abilene network and commodity ISPs.

**Texas Leverages National Lambda Rail Layer 3 Service**

- LEARN connected to NLR's PacketNet Routed IP service with an initial 1-gigabit per second. PacketNet provides nationwide layer 3 IP-based services utilizing Cisco CRS-1 routers. A 10-gigabit Ethernet connection to one of the two types of NLR PacketNet services is included as part of all NLR memberships.

**UT System forms partnership with TACC for high performance computing resources and services**

- The University of Texas System Board of Regents has taken steps to significantly expand world-class research programs and increase external funding of research at its institutions by establishing a three-year partnership with the Texas Advanced Computing Center (TACC) at The University of Texas at Austin.

# LEARN Progress

## Current Network Status and Projected Network Expansion

LEARN's network has continued to expand and key segments have been completed. These segments appear in **Figure 1**. During the last year, LEARN has completed and put into production the fiber links from Austin to Waco to Ft. Worth and Dallas. Indefeasible Right of Use (IRU) is in place from Austin to San Antonio on the western leg and Houston to Corpus Christi. Both of these paths are awaiting equipment installation. LEARN is also evaluating a "breakout" along the Houston to Corpus Christi path to serve institutions in Victoria. Negotiations are currently underway with a fiber vendor for the Dallas to Longview/Tyler and Houston to Beaumont segments. The Houston to Galveston segment continues to remain problematic. Currently, there are two possibilities to get fiber to Galveston –– either the actual laying of new fiber by LEARN or using a contractor. The San Antonio to El Paso segment is currently available for production but awaiting local connections in El Paso. LEARN and Texas Tech, our member institution in Lubbock, have elected to delay the deployment of that leased fiber until such time as more service is available through the LEARN backbone. This is anticipated in the middle of next year when LEARN will offer shared Layer 2 services and becomes the common Texas aggregator as the successor to Internet2.

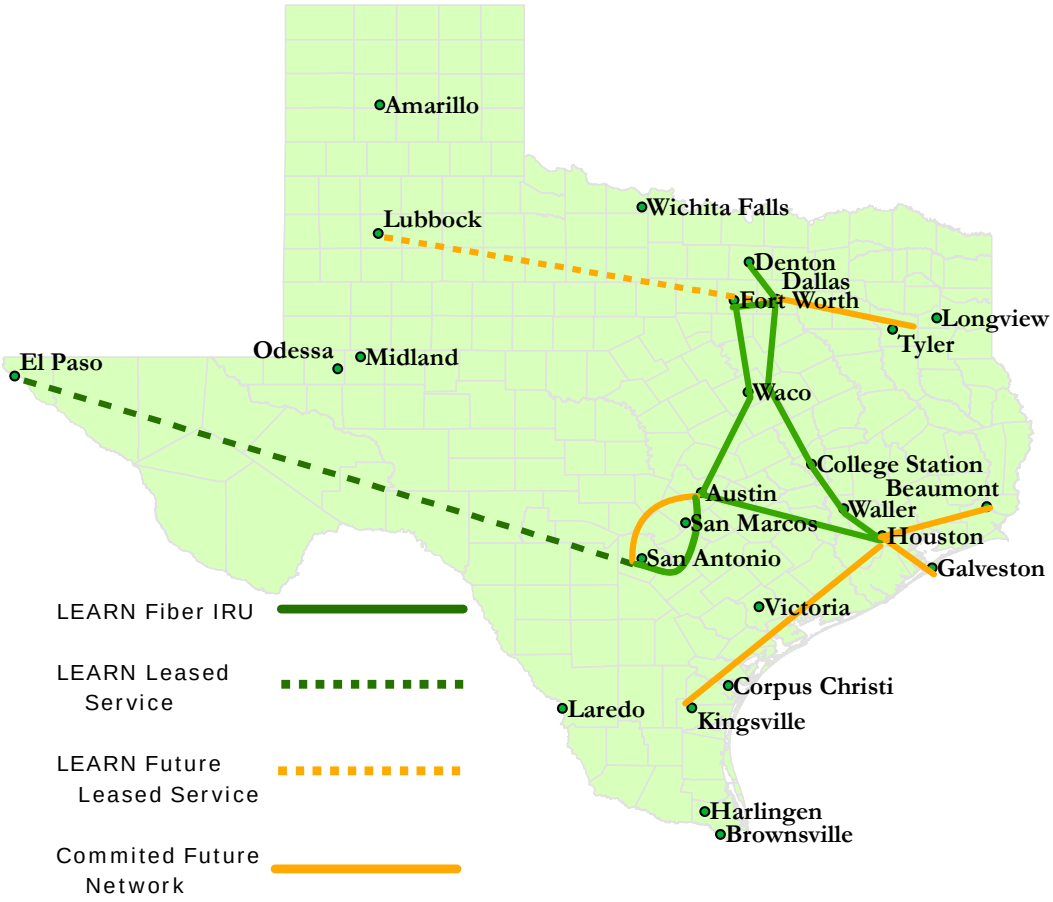



**Figure 1. Current state of the network.**

Cities shown in production have available dedicated 1 or 10 gigabit Layer 1 service between city pairs. The University of Texas and Texas A&M have loaned equipment to the project which will allow the network Layer 2 and Layer 3 services directly. LEARN has an Indefeasible Right of Use (IRU) with Level3 from Houston to Dallas to San Antonio and back to the origin in Houston. An IRU with Grande Communications provides a short segment in San Antonio. Denton and Corpus Christi are also served by Level3 IRUs. The San Antonio to El Paso service is via a five-year lease for 10-gigabit from the NLR. LEARN expects to obtain IRUs for service to Galveston, Beaumont and Longview-Tyler. At this time, LEARN is also committed to providing leased services to Lubbock, but continues to explore IRU alternatives. Cities shown with no network demonstrated are among those that have been identified as communities LEARN anticipates will be part of a network expansion.

## LEARN Funding – Income and Expense

### Annual Expense

LEARN's fiscal year is the calendar year. Audited financial reports for 2004 and 2005 have been distributed. The financial representations in this report detail activity from January 2006 to the most current information available to date. A more comprehensive view will be available in an annual report which will be available in early 2007.The total expense for the period January – July 2006 was $611,762.41. Categories of expenses and income are shown in **Figure 2** and **Figure 3**, and the detailed report is given in Appendix 3.

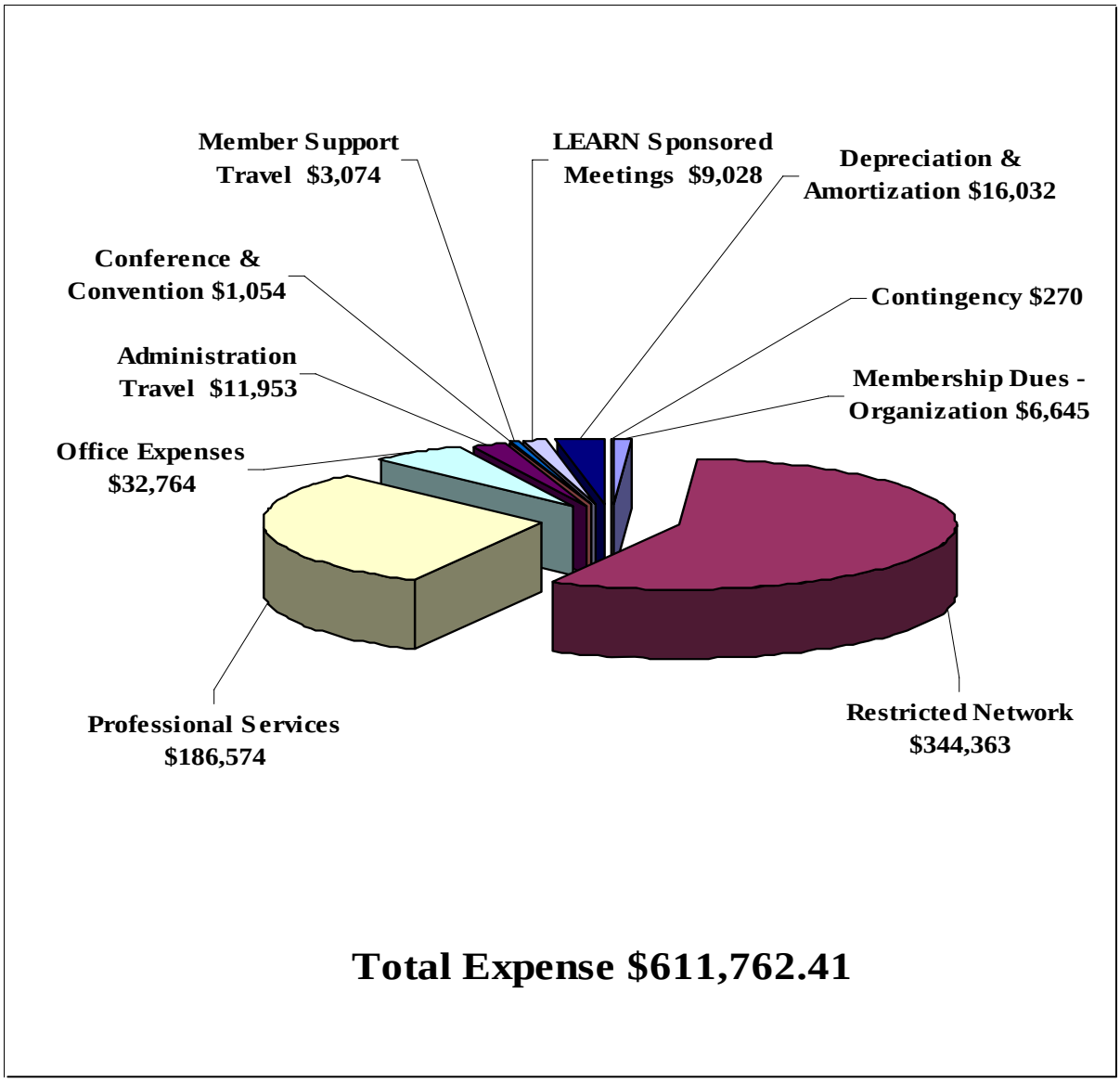



**Figure 2. LEARN expenses.**

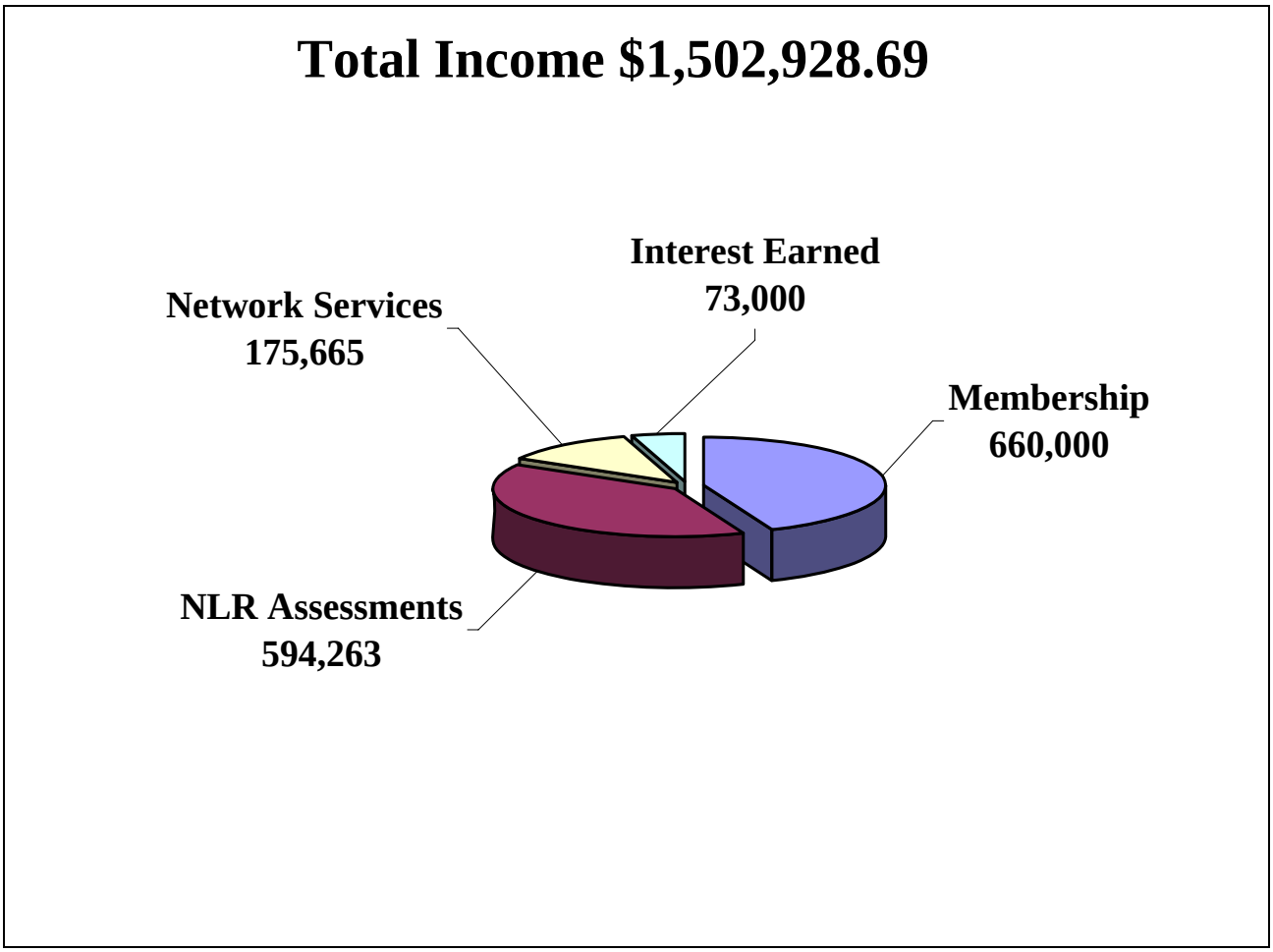



**Figure 3. LEARN income.**

### LEARN Funding – Financial Position

The Total Liabilities and Equity for the period January – July 2006 was $8,696,497.90. Financial categories are shown in **Figure 4** and the detailed report is given in Appendix 4.

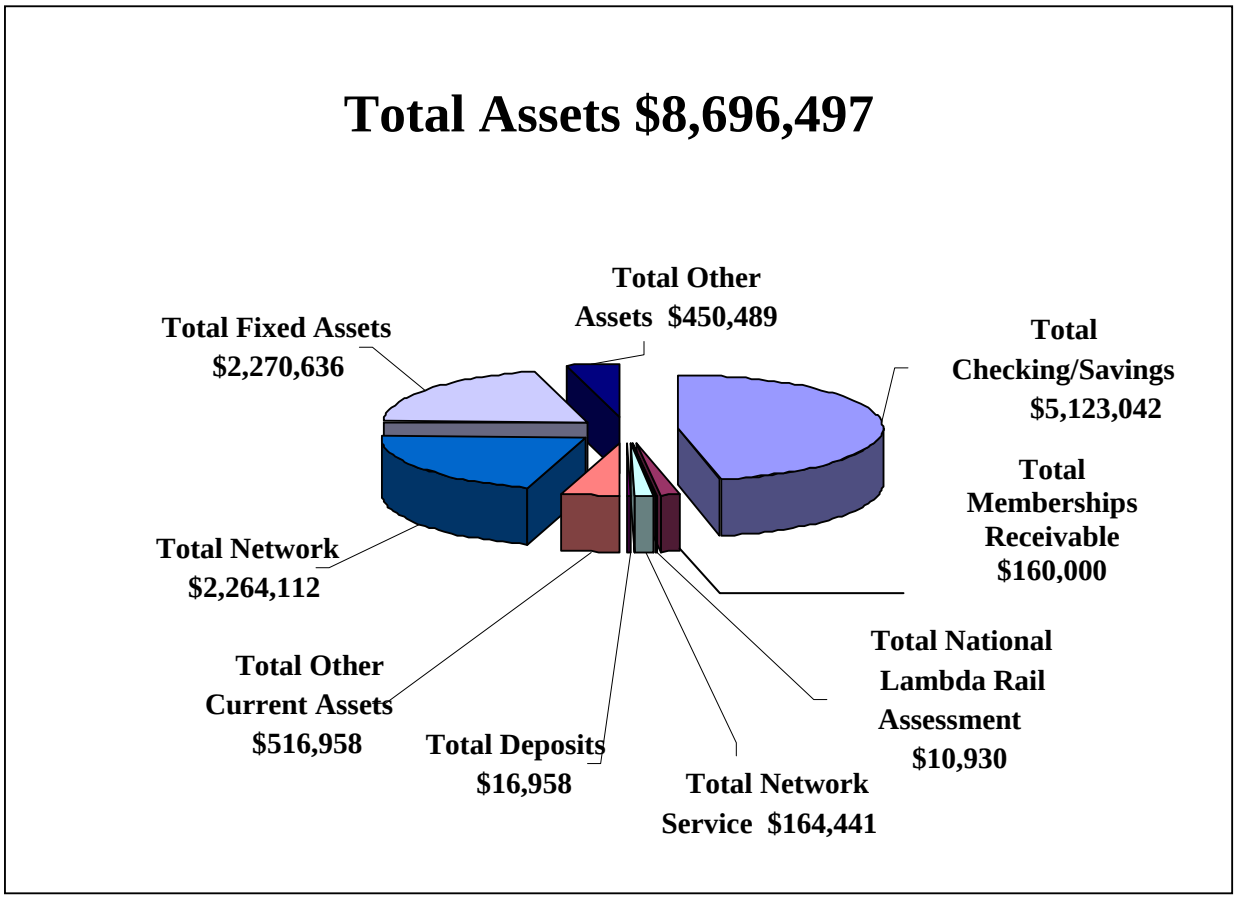



**Figure 4. LEARN Total Assets.**

### Annual Cost-Savings

Still in its early stages of member use, the LEARN network has already created cost-savings for several of our member organizations.

The Trans-Texas Videoconference Network (TTVN), is the Texas A&M University System-wide area data and videoconference network that serves the university campuses, research and service agencies, numerous affiliated colleges and universities, K-12 school districts and state agencies throughout Texas. TTVN estimates a cost-savings in FY 2006 of $98,447. This cost-savings was accomplished by the difference in costs using LEARN circuits over commercial carrier circuits. Additionally, LEARN was able to locate TTVN in a POP with WilTel and gain a volume discount on commodity Internet. More importantly, the backbone capacity increased from an 0C3 (155 Mbps) to a Gig-E (1 Gbps). A significant amount of savings occurred as the network capacity increased.

The University of North Texas (UNT) indicated cost-savings by using LEARN fiber from Denton to Dallas. Currently LEARN charges to Dallas are estimated at $2,100 per month plus the gigaman circuit costs to go from Dallas to Richardson of $1,100 per month for a total of $3,200 per month.This is in contrast to $9,700 per month for the two DS3s––a savings of $6,500 per month or $78,000 per year. There is also a 1Gb connection now versus a 90Mb connection with the two DS3s––or 22 times more bandwidth for one third the cost.

The University of Texas System Office of Telecommunications also made extensive use of

the evolving LEARN network this year. Although overall the monthly expenses for transport increased by 5 percent, the bandwidth doubled.

### Projected Cost Savings/Avoidance

Due to the proposed 50 percent increase in LEARN city pair fees, coupled with a new $50,000 aggregation fee, TTVN will not see an actual cost-savings as it did in FY06. However, looking at cost-avoidance, there is still a significant savings. The cost of purchasing a Gig-E backbone similar in size, scope and location to TTVN's implementation of the LEARN in 2006 would cost approximately $1,346,325 based on a quote from a major carrier. Projected FY07 LEARN fees at the proposed $2,033 per month city pair rate are estimated at $683,773, plus the $50,000 aggregation fee for a total of $733,773. Thus, there is a cost-avoidance of approximately $612,552.

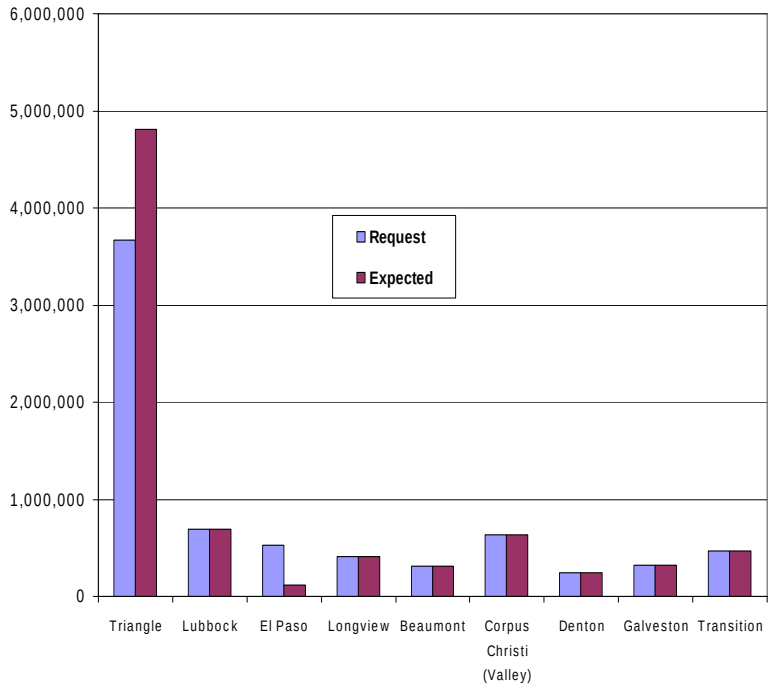
The University of Texas System OTS expects that in the coming year, the monthly cost for services will increase by about 70 percent but it will meet the demands of its users with a 500 percent increase in bandwidth. Further, the opportunity to meet bandwidth requests on the path LEARN serves is almost unlimited for the near future.

### Distribution of TEF Funds

The distribution of the Texas Enterprise Funds (TEF) to date (31 July 2006) is detailed in **Figure 5**. Bank balance to date (TEF only) is $4,186,750.33, and the total amount encumbered is $5,457,731.

# TEF Distribution

| | Request | Expected |
|---|---|---|
| Triangle | 3,665,323 | 4,807,118 |
| Lubbock | 695,160 | 695,160 |
| El Paso | 525,790 | 114,110 |
| Longview | 407,600 | 407,600 |
| Beaumont | 310,500 | 310,500 |
| Corpus Christi (Valley) | 637,000 | 637,000 |
| Denton | 244,190 | 244,190 |
| Galveston | 325,000 | 325,000 |
| Transition | 470,104 | 470,104 |
| | 7,280,667 | 8,010,782 |
| | | (730,115) |




Total encumbered to date = 5,457,731

Bank balance (TEF only) as of 7/31/06 = 4,186,750.33

**Figure 5. Distribution of Texas Enterprise Funds.**

## Infrastructure Measures of Performance

In 2005, Texas A&M made direct production use of components of the network and served both the College Station campus and many other institutions through the TTVN network. In 2006, The University of Texas System also made extensive use of the network, and a number of other institutions are connected directly to the LEARN fabric (e.g., Baylor University, Blinn Community College).

In August 2006, the Research and Education Network of Houston (RENoH), a robust research and education fiber optical network in Houston, connected to LEARN. Led by the University of Houston in partnership with Abovenet, RENoH provides two multiple fiber rings tol enable access to the LEARN point-of-presence and consequently to all LEARN and LEARN connected resources. This metropolitan ring provides direct fiber connections to the LEARN infrastructure for the University of Houston (UH), Rice University, Baylor College of Medicine, The University of Texas Health Science Center at Houston, The MD Anderson Cancer Center and a growing list of participants.

Baylor University in Waco has recently completed a fiber connection to the LEARN point of presence in Waco. While this will immediately provide that institution, as well as others in the region access to Internet2 and other national networks, it will also ensure that Baylor has state-of-the art access to these networks for the foreseeable future.

The LEARN Strategic Planning Committee defined numerous values of service, performance and accountability in developing the LEARN Strategic Plan. Some values are more easily quantifiable as a measure of success and are defined as metrics of performance. The following table highlights some of the results of these metrics for LEARN in 2006.

**Network Growth**

| Category | 2005 | 2006 |
|---|---|---|
| Route Miles | 563 | 1483 |
| Number of Members Connected | 1 | 8+ |
| 1 Gigabit Ethernet between cities in service | 5 | 12 |
| 10 Gigabit Ethernet (or full lambda) between cities in service | 0 | 2 |

# Appendices

## Appendix 1. LEARN Organization Structure

| | |
|---|---|
| Chair | Dave Edmondson, Assistant Provost for Information Services, Texas Christian University (Fort Worth) |
| Past Chair | Dan Updegrove, Vice President for Information Technology, The University of Texas at Austin (Austin) |
| Chair Elect | Pierce Cantrell, Vice President and Associate Provost of Information Technology, Texas A&M University, (College Station) |
| Treasurer | Richard Moore, Vice President for Business and Administration, The University of Texas Medical Branch (Galveston) |
| Secretary | Maurice Leatherbury, Vice President for Computing and Chief Technology Officer, University of North Texas System (Denton) |
| Chair, Governance and Participation Committee | C. Van Wyatt, Vice President for Information Technology, Texas State University, San Marcos (San Marcos) |
| Chair, Finance Committee | Richard Moore (Mr. Moore is also Treasurer, listed above) |
| Chair, Operations and Services Committee | Kamran Khan, Vice Provost for Information Technology, Rice University (Houston) |
| Executive Director & CEO | Jim Williams |

## Appendix 2. LEARN Organizational Members

| Institutional Member | Location | Board Representative | Title |
|---|---|---|---|
| | | | |
| Baylor College of Medicine | Houston | Jenifer Jarriel | Vice President for Information Technology |
| Baylor University | Waco | Truell Hyde | Vice Provost for Research |
| Lamar University | Beaumont | Cliff Woodruff | Associate Vice President, Information Technology |
| Prairie View A&M University | Prairie View | James Hobbs | Chief Information Officer |
| Rice University | Houston | Kamran Khan | Vice Provost for Information Technology |
| Sam Houston State University | Huntsville | Jim Stevens | Associate Vice President for Information Resources |
| Southern Methodist University | Dallas | Joe Gargiulo | Executive Director for Administrative Computing Services |
| Stephen F. Austin State University | Nacogdoches | Bill Wagner | Director, Information Tech Services |
| Texas A&M University | College Station | Pierce Cantrell | Vice President and Associate Provost for Information Technology |
| Texas A&M University - Corpus Christi | Corpus Christi | Claudia Johnston | Associate Vice President for Academic Affairs |

| Institutional Member | Location | Board Representative | Title |
|---|---|---|---|
| Texas Association of Community Colleges | Austin | Bill Carter | Associate Vice President of Information Technology |
| Texas Christian University | Forth Worth | Dave Edmondson | Assistant Provost for Information Services |
| Texas State University - San Marcos | San Marcos | Van Wyatt | Vice President for Information Technology, TSU San Marcos |
| Texas Tech University | Lubbock | Sam Segran | Chief Information Officer |
| Texas Tech University System | Lubbock | Mike Phillips | Chief Information Officer |
| The Northeast Texas Consortium (NETnet) | Tyler | Mickey Slimp | Executive Director |
| The Texas A&M University System | College Station | Rod Zent | Chair, TAMU System Telecommunications Council |
| The Texas A&M University System Health Science Center | College Station | David Cantrell | Associate Vice President for Information Technology and Chief Information Officer |
| The University of Texas - Pan American | Edinburg | Gary Wiggins | Chief Information Officer for Information Technology |
| The University of Texas at Arlington | Arlington | Suzanne Montague | Vice President for Information Technology and CIO |
| The University of Texas at Austin | Austin | Dan Updegrove | Vice President for Information Technology |
| The University of Texas at Dallas | Richardson | Jim Gary | Information Resources Management - Interim |
| The University of Texas at El Paso | El Paso | Stephen Riter | Vice President for Information Resources and Planning |
| The University of Texas at San Antonio | San Antonio | John McGowan | Chief Information Officer and Associate Vice Provost for Information Technology |
| The University of Texas Health Center at Tyler | Tyler | Vernon Moore | Chief Business & Financial Officer |
| The University of Texas Health Science Center at Houston | Houston | Bill Weems | Vice President for Academic Computing |
| The University of Texas Health Science Center at San Antonio | San Antonio | Jerry York | Vice President & Chief Information Officer |
| The University of Texas M.D. Anderson Cancer Center | Houston | Lynn Vogel | Acting Chief Information Officer |
| The University of Texas Medical Branch | Galveston | Richard Moore | Vice President for Business Affairs & Administration |
| The University of Texas Southwestern Medical Center at Dallas | Dallas | Kirk Kirksey | Vice President for Information Resources |
| The University of Texas System | Austin | Clair Goldsmith | Associate Vice Chancellor & Chief Information Officer |
| University of Houston System | Houston | Dennis Fouty | Vice President for Information Technology |
| University of North Texas System | Denton | Maurice Leatherbury | Associate Vice President for Computing and CTO |

# Appendix 3. LEARN Income and Expense Report 2006

# Lonestar Education And Research Network
## Profit & Loss
### January through July 2006

| | Jan - Jul 06 |
|---|---|
| **Ordinary Income/Expense** | |
| **Income** | |
| **4100 · Earned Revenues** | |
| **4110 · Membership** | 660,000.00 |
| **4120 · NLR Assessments** | 594,263.00 |
| **4130 · Network Services** | 175,665.00 |
| **Total 4100 · Earned Revenues** | 1,429,928.00 |
| **4200 · Interest Earned** | 73,000.69 |
| **Total Income** | 1,502,928.69 |
| **Gross Profit** | 1,502,928.69 |
| **Expense** | |
| **8530 · Membership dues - organization** | 6,645.00 |
| **6000 · Restricted Network** | |
| **6001 · S & H by Vendor** | 750.47 |
| **6002 · Federal Excise Taxes** | 943.98 |
| **6003 · Administrative Surcharge** | 51.95 |
| **6100 · NRC** | |
| **6101 · Stock** | 16,004.07 |
| **6103 · Services** | 3,041.50 |
| **6105 · Installations** | 11,075.00 |
| **Total 6100 · NRC** | 30,120.57 |
| **6200 · MRC** | |
| **6201 · Connections & Fiber** | 279,595.64 |
| **6202 · Colocation** | 32,901.14 |
| **Total 6200 · MRC** | 312,496.78 |
| **Total 6000 · Restricted Network** | 344,363.75 |
| **7500 · Professional Services** | |
| **7505 · Auditing** | 7,300.00 |
| **7511 · Recruitment** | 250.00 |
| **7515 · Administration** | 174,064.12 |
| **7525 · Accounting services** | 800.00 |
| **7530 · Legal services** | 3,159.85 |
| **7535 · Consulting** | 1,000.81 |
| **Total 7500 · Professional Services** | 186,574.78 |
| **8100 · Office Expenses** | |
| **8102 · Banking Fees and Late Charges** | |
| **8103 · Credit Card Finance Charges** | 73.26 |
| **8102 · Banking Fees and Late Charges - Other** | 169.68 |
| **Total 8102 · Banking Fees and Late Charges** | 242.94 |
| **8105 · Marketing and Education** | 10,514.80 |
| **8110 · Supplies** | |
| **8112 · Office supplies** | 1,609.73 |
| **Total 8110 · Supplies** | 1,609.73 |
| **8113 · Miscellaneous** | 25.58 |
| **8130 · Telephone & telecommunications** | |
| **8131 · Telephone** | 963.75 |
| **8132 · Conferencing** | 3,121.83 |
| **Total 8130 · Telephone & telecommunications** | 4,085.58 |
| **8133 · Computer services** | 206.81 |
| **8135 · Web Services** | 7,556.25 |
| **8140 · Postage, shipping, delivery** | 218.20 |
| **8152 · Equipment** | |
| **8155 · Computer equipment** | 4,158.48 |
| **8157 · Other** | 1,047.40 |

# Lonestar Education And Research Network
## Profit & Loss
### January through July 2006

| | Jan - Jul 06 | |
|---|---|---|
| Total 8152 · Equipment | 5,205.88 | |
| 8170 · Printing & copying | 2,697.72 | |
| 8171 · Software | 95.40 | |
| 8180 · Books, subscriptions, reference | 305.95 | |
| Total 8100 · Office Expenses | | 32,764.84 |
| 8300 · Administration Travel | | |
| 8310 · Travel | 8,257.73 | |
| 8311 · Meals | 119.28 | |
| 8312 · Hotel | 3,576.87 | |
| Total 8300 · Administration Travel | | 11,953.88 |
| 8313 · Conference & Convention Expense | | 1,054.99 |
| 8315 · Member Support Travel | | |
| 8316 · Meals | 60.07 | |
| 8315 · Member Support Travel - Other | 3,014.66 | |
| Total 8315 · Member Support Travel | **3,074.73** | |
| 8325 · LEARN Sponsored Meetings | | 9,028.40 |
| 8400 · Depreciation & amortization exp | | |
| 8410 · Depreciation Expense | 2,270.13 | |
| 8450 · Amortization Expense | 13,761.91 | |
| Total 8400 · Depreciation & amortization exp | | 16,032.04 |
| 8500 · Contingency | | |
| 8540 · Staff development | 270.00 | |
| Total 8500 · Contingency | | 270.00 |
| 8600 · NLR Membership Fee | | 0.00 |
| Total Expense | | 611,762.41 |
| Net Ordinary Income | | 891,166.28 |
| Net Income | | **891,166.28** |

# Appendix 4. LEARN Financial Position Report 2006

09/14/06
Accrual Basis

# Lonestar Education And Research Network
## Balance Sheet
### As of July 31, 2006

| | Jul 31, 06 | |
|---|---|---|
| **ASSETS** | | |
| **Current Assets** | | |
| **Checking/Savings** | | |
| **1010 · Program Account** | | 883,484.27 |
| **1011 · Network Account** | | 6,441.67 |
| **1021 · TEF** | | 4,186,750.33 |
| **1031 · N.L.R. Account** | | 1,144.68 |
| **1071 · Certificate of Deposit** | | 45,221.63 |
| **Total Checking/Savings** | | 5,123,042.58 |
| **Accounts Receivable** | | |
| **1110 · Memberships receivable** | | |
| **1110.02 · Lamar University** | 20,000.00 | |
| **1110.07 · TAMU** | 20,000.00 | |
| **1110.08 · TAMU at Corpus Christi** | 20,000.00 | |
| **1110.27 · UT HSC at Houston** | 20,000.00 | |
| **1110.30 · UT MB at Galveston** | 20,000.00 | |
| **1110.31 · Prarie View A&M University** | 40,000.00 | |
| **1110.33 · UT HC at Tyler** | 20,000.00 | |
| **Total 1110 · Memberships receivable** | | 160,000.00 |
| **1111 · National Lambda Rail Assessment** | | |
| **1111.22 · Lamar University** | 10,930.00 | |
| **Total 1111 · National Lambda Rail Assessment** | | 10,930.00 |
| **1120 · Network Service** | | |
| **1120.01 · University of Texas Systems** | 135,324.00 | |
| **1120.02 · Rice Univeristy-SETGP** | 18,700.00 | |
| **1120.03 · Sam Houston State University** | 3,652.00 | |
| **1120.05 · Texas A&M University** | 5,412.00 | |
| **1120.07 · Blinn College** | 1,353.00 | |
| **Total 1120 · Network Service** | | 164,441.00 |
| **Total Accounts Receivable** | | 335,371.00 |
| **Other Current Assets** | | |
| **1450 · Prepaid expenses** | | 500,000.00 |
| **1460 · Deposits** | | |
| **1461 · UT Austin Agency Fund** | 16,537.34 | |
| **1462 · UTMB Agency Fund - Operations** | 421.53 | |
| **Total 1460 · Deposits** | | 16,958.87 |
| **Total Other Current Assets** | | 516,958.87 |
| **Total Current Assets** | | 5,975,372.45 |
| **Fixed Assets** | | |
| **1640 · Furniture, fixtures, & equip** | | 11,675.00 |
| **1745 · Accum. Dep.- Furn,fix,equip.** | | -5,151.13 |
| **1910 · Network** | | |
| **1910.09 · UT Equipment and IRU Transfer** | 2,133,690.49 | |
| **1910.10 · Grande Communications IRU** | 130,422.00 | |
| **Total 1910 · Network** | | 2,264,112.49 |
| **Total Fixed Assets** | | 2,270,636.36 |
| **Other Assets** | | |
| **1800 · Other long-term assets** | | |
| **1802 · FiberCo IRU** | 337,800.00 | |
| **1803 · Level(3) IRU** | 134,037.00 | |
| **1804 · Accum. Amort.-IRU** | -21,347.91 | |
| **Total 1800 · Other long-term assets** | | 450,489.09 |
| **Total Other Assets** | | 450,489.09 |

# Lonestar Education And Research Network
## Balance Sheet
### As of July 31, 2006

| | Jul 31, 06 |
|---|---|
| **TOTAL ASSETS** | **8,696,497.90** |
| **LIABILITIES & EQUITY** | |
| **Liabilities** | |
| **Current Liabilities** | |
| **Accounts Payable** | |
| **2010 · Accounts payable** | 5,034.39 |
| **Total Accounts Payable** | 5,034.39 |
| **Other Current Liabilities** | |
| **2311 · Deferred NLR Assessments** | |
| **2311.01 · UT at Austin** | 30,242.00 |
| **2311.02 · Deferred NLR 2006** | 405,736.00 |
| **Total 2311 · Deferred NLR Assessments** | 435,978.00 |
| **Total Other Current Liabilities** | 435,978.00 |
| **Total Current Liabilities** | 441,012.39 |
| **Total Liabilities** | 441,012.39 |
| **Equity** | |
| **3010 · Unrestrict (retained earnings)** | 7,864,319.23 |
| **Net Income** | 391,166.28 |
| **Total Equity** | 8,255,485.51 |
| **TOTAL LIABILITIES & EQUITY** | **8,696,497.90** |

# Appendix 5. LEARN Audit Report 2005

# TEXAS GIGAPOP
# dba LONESTAR EDUCATION AND RESEARCH NETWORK

FINANCIAL STATEMENTS
WITH INDEPENDENT AUDITOR'S REPORT

YEAR ENDED DECEMBER 31, 2005

*ACCEPTED BY LEARN BOARD*
*MAY 31, 2006*

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*Gindler, Chappell, Morrison & Co. P.C.*
**Certified Public Accountants**

## INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of
Texas GigaPOP
dba Lonestar Education and Research Network
Austin, Texas

We have audited the accompanying statement of financial position of Texas GigaPOP dba **Lonestar Education And Research Network** (a nonprofit organization) as of December 31, 2005, and the related statements of activities and cash flows for the year then ended. These financial statements are the responsibility of the Organization's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Texas GigaPOP dba **Lonestar Education And Research Network** as of December 31, 2005, and the changes in its net assets and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Gindler, Chappell, Morrison & Co., P.C.
Austin, Texas
March 31, 2006

# FINANCIAL STATEMENTS

**TEXAS GIGAPOP**
**dba LONESTAR EDUCATION AND RESEARCH NETWORK**

STATEMENT OF FINANCIAL POSITION

December 31, 2005

| | |
|---|---|
| **ASSETS** | |
| Current assets | |
| Cash | $ 7,739,137 |
| Investments (note 2) | 44,000 |
| Accounts receivable | |
| Membership dues | 20,000 |
| Other | 4,000 |
| Prepaid expenses | 500,000 |
| Funds held by others (note 3) | 18,192 |
| Total current assets | 8,325,329 |
| Fixed assets | |
| Furniture and Equipment | 11,675 |
| Less accumulated depreciation | ( 2,881) |
| Net fixed assets | 8,794 |
| Intangible assets | |
| Network IRU Access Rights | 471,837 |
| Less accumulated amortization | ( 7,586) |
| Net intangible assets | 464,251 |
| Total assets | $ 8,798,374 |
| **LIABILITIES AND NET ASSETS** | |
| Current liabilities | |
| Accounts payable | 86,830 |
| Deferred revenue | 848,202 |
| Total current liabilities | 935,032 |
| Commitments (note 4) | |
| Total liabilities | 935,032 |
| Net assets | |
| Unrestricted net assets | |
| Available for general operations | 746,893 |
| Investment in fixed assets/intangibles | 473,045 |
| Total unrestricted net assets | 1,219,938 |
| Temporarily restricted net assets (note 5) | 6,643,404 |
| Permanently restricted net assets (note 6) | - |
| Total net assets | 7,863,342 |
| Total liabilities and net assets | $ 8,798,374 |

See accompanying Notes to Financial Statements.

**TEXAS GIGAPOP**
**dba LONESTAR EDUCATION AND RESEARCH NETWORK**

STATEMENT OF ACTIVITIES

Year Ended December 31, 2005

| | Current Operating Funds | | | |
|---|---|---|---|---|
| | Unrestricted | Temporarily Restricted | Permanently Restricted | Total |
| **REVENUES AND OTHER SUPPORT** | | | | |
| Contributions | $ 4,000 | $ - | $ - | $ 4,000 |
| Grants | | 7,281,000 | - | 7,281,000 |
| Membership dues | 656,067 | - | - | 656,067 |
| Assessments | 1,000,000 | - | - | 1,000,000 |
| Investment income | 50,937 | - | - | 50,937 |
| Net assets released from donor restrictions (note 5) | 637,596 | (637,596) | - | - |
| Total revenues | 2,348,600 | 6,643,404 | - | 8,992,004 |
| **EXPENSES** | | | | |
| Program expenses | 1,308,461 | - | - | 1,308,461 |
| Supporting services | | | | |
| Management & general | 291,697 | - | - | 291,697 |
| Total expenses | 1,600,158 | - | - | 1,600,158 |
| **CHANGE IN NET ASSETS** (decrease) | 748,442 | 6,643,404 | - | 7,391,846 |
| **NET ASSETS** | | | | |
| Beginning of year | 471,496 | - | - | 471,496 |
| **End of Year** | $ 1,219,938 | $ 6,643,404 | $ - | $ 7,863,342 |

See accompanying Notes to Financial Statements

**TEXAS GIGAPOP**
**dba LONESTAR EDUCATION AND RESEARCH NETWORK**

STATEMENT OF CASH FLOWS

Year Ended December 31, 2005

| | |
|---|---|
| **CASH FLOWS PROVIDED BY (USED BY) OPERATING ACTIVITIES** | |
| Change in net assets (decrease) | $ 7,391,846 |
| Adjustments to reconcile change in net assets to net cash provided by operating activities | |
| Amortization/Depreciation | 9,895 |
| (Increase) decrease in operating assets | |
| Accounts receivable | 76,010 |
| Prepaid expenses | (500,000) |
| Funds held by others | 673,719 |
| Increase (decrease) in operating liabilities | |
| Accounts payable | 43,649 |
| Deferred revenue | 564,424 |
| Net cash provided by (used by) operating activities | 8,259,543 |
| **CASH FLOWS PROVIDED BY (USED BY) INVESTING ACTIVITIES** | |
| Purchase of fixed assets/intangible assets | (476,406) |
| Net cash provided by (used by) investing activities | (476,406) |
| **CASH FLOWS PROVIDED BY (USED BY) FINANCING ACTIVITIES** | |
| Purchase of investments | (44,000) |
| Net cash provided by (used by) investing activities | (44,000) |
| **NET INCREASE IN CASH** | 7,739,137 |
| **CASH** | |
| Beginning of year | - |
| **End of year** | $ 7,739,137 |

Interest paid during the year was $0.
Income tax paid during the year was $0.

See accompanying Notes to Financial Statements

**DESCRIPTION OF THE ORGANIZATION**

Texas GigaPOP dba Lonestar Education And Research Network (LEARN) is a Texas non-profit corporation established in January 2001. The primary purpose of the Organization is a collaboration of Texas higher education institutions that support their research, education, health care and public service missions through the innovative development, operation and utilization of advanced statewide networking, access to global resources and related services.

LEARN is exempt from Federal income tax under Internal Revenue Code Section 501(c)(3) for income related to its exempt purpose. LEARN is classified by the Internal Revenue Service as an organization other than a private foundation.

**NOTE 1: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Accounting Estimates-**The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates. The financial statements include some amounts that are based on management's best estimates and judgments.

**Accounting Method-**The financial statements have been prepared using the accrual basis method of accounting, which includes reporting revenues and other support and related accounts receivable when earned. Contributions are considered to be available for unrestricted use unless specifically restricted by the donor. Amounts received that are restricted for future periods or for specific purposes are reported as temporarily restricted or permanently restricted and increases those net asset classes. Expenses and the related accounts payable are reported when an obligation is incurred, regardless of when cash is disbursed. All expenses are reported as reductions in unrestricted net assets.

**Net Assets Classes-**LEARN reports the following net assets classes:

Permanently restricted net assets– the part of the net assets of a not-for-profit organization resulting from contributions whose use by an organization is limited by donor-imposed stipulations that neither expire by passage of time nor can be fulfilled or otherwise removed by actions of the organization are considered permanently restricted net assets. An example of a permanently restricted net asset would be the donation of funds (or other assets) to an Organization in which the donor imposed a restriction that the funds not be expended, but that the organization would be permitted to use or expend part or all of the income (or other economic benefit) derived from the donation.

Temporarily restricted net assets- not-for-profit organizations receive contributions and other resources whose use is limited by stipulations that are more specific than the broad limits resulting from the nature and purpose of the organization and its programs. Resources (net assets) with such stipulations that either expire by passage of time or can be fulfilled by actions of an organization are reported as temporarily restricted net assets.

Unrestricted net assets are composed of all resources not included in the permanently restricted net assets or the temporarily restricted net assets categories. While these resources (net assets) are reported as unrestricted, LEARN manages them in compliance with its exempt purposes, Board designations, legal requirements, and contractual obligations.

**Accounts receivable-**Membership dues are annual dues from members that have been billed but not paid at year end. Other receivables are promises to give that have not be received at year end. Accounts receivable are valued using an allowance for doubtful accounts. Periodically, management reviews the collectibility of accounts receivable using such factors as the collection history of the account, the age of the account and the account's ability to pay. All receivables are expected to be collected within one year. At year end, membership receivables are considered past due, however no allowance for doubtful accounts is considered necessary. Allowance for doubtful accounts is considered an accounting estimate.

**NOTE 1: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES** (continued)

**Fixed assets-**Fixed assets are capitalized at cost if the estimated useful service life of the item is more than one year and the cost of the item is over $1,000. Donations of fixed assets are recorded as support at their estimated fair value at the date of donation. Depreciation of fixed assets is computed over the estimated useful service life of the asset (generally 3 years) using the straight line method of computation. Depreciation expense and accumulated depreciation reported in the financial statements are considered an accounting estimate.

**Intangible assets-**Intangible assets consist of contracts for the indefeasible right to use (IRU) facilities of various service providers though out the state. The contracts are for a 20 year period and thus are amortized over this period using the straight line method of computation. Asset rights expire if monthly maintenance and collocation expenses are not paid promptly. Amortization expense and accumulated amortization reported in the financial statements are considered an accounting estimate.

**Allocation of costs-**LEARN allocates common costs between program services and management and general by management's judgment of the estimated costs related to LEARN's activities. The estimates are reviewed periodically, and the allocation of costs revised, if necessary, to reflect changes in the activities of the Organization.

**Cash and cash equivalents-**For purposes of the cash flows, highly liquid investments are considered to be cash equivalents if they have a maturity of three months or less when purchased.

**NOTE 2: INVESTMENTS**

Investments reported in the accompanying financial statements consist of certificates of deposits and are valued at face value, which approximates fair value. Investment income is reported as unrestricted revenues. Investment expenses, if any, are reported as expenses.

| | Cost | Fair Market Value |
|---|---|---|
| Certificates of Deposits | $ 44,000 | $ 44,000 |

**NOTE 3: FUNDS HELD BY OTHERS-**are Organization funds held by the University of Texas Medical Branch-Galveston (UTMB) and The University of Texas at Austin (UT). UTMB served as the fiscal agent for LEARN during 2004. All monies received were deposited into UTMB's bank accounts and held for the benefit of LEARN. All expenses were paid on behalf of LEARN by UTMB from LEARN resources. All accounting was done by UTMB. At December 31, 2005 only a small balance remained with UTMB to cover incidental costs that may arise. LEARN deposits funds with UT for payment of expenses such as telephone, postage, etc. as these expenses come due.

**NOTE 4: COMMITMENTS**

Additional information with respect to commitments incurred by the Organization follows:

> As part of LEARN's membership in National LamdaRail, Inc., the Organization has committed to a $5,000,000 contribution over 5 years with the first $1,000,000 payment due in 2004 and an additional $1,000,000 payment due in 2005, 2006, 2007 and 2008.

**NOTE 5: TEMPORARILY RESTRICTED NET ASSETS**

At year-end, LEARN had the following temporarily restricted net assets:

| Funding source | Amount | Restriction |
|---|---|---|
| Office of the Governor | $6,643,404 | Restricted to use |

**NOTE 6: PERMANENTLY RESTRICTED NET ASSETS**

At year end, Lonestar Education And Research Network had no permanently restricted net assets

**NOTE 7: OFF-BALANCE-SHEET CREDIT RISK**

For accounting purposes, cash balances (including certificate of deposits) with a financial institution in excess of Federal Deposit Insurance Corporation (FDIC) coverage are considered a credit risk. Throughout the year, the Organization maintained cash balances with a financial institution that consistently exceeded the institution's FDIC coverage. At year end excess deposits amounted to approximately $7,639,137. LEARN maintains its cash balances with high-quality national financial institutions and does not require collateral against its cash balances. Additionally, the Organization constantly monitors its financial positions with the financial institutions and does not anticipate any nonperformance by any of the parties.

# Appendix 6. LEARN Audit Report 2004

# TEXAS GIGAPOP
# dba LONESTAR EDUCATION AND RESEARCH NETWORK

FINANCIAL STATEMENTS
WITH INDEPENDENT AUDITOR'S REPORT

YEAR ENDED DECEMBER 31, 2004

*ACCEPTED BY LEARN BOARD*
*MAY 31, 2006*

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*Gindler, Chappell, Morrison & Co. P.C.*
**Certified Public Accountants**

## INDEPENDENT AUDITOR'S REPORT

To the Board of Directors of
Texas GigaPOP
dba Lonestar Education and Research Network
Austin, Texas

We have audited the accompanying statement of financial position of Texas GigaPOP dba **Lonestar Education And Research Network** (a nonprofit organization) as of December 31, 2004, and the related statements of activities and cash flows for the year then ended. These financial statements are the responsibility of the Organization's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Texas GigaPOP dba **Lonestar Education And Research Network** as of December 31, 2004, and the changes in its net assets and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Gindler, Chappell, Morrison & Co., P.C.
Austin, Texas
March 31, 2006

# FINANCIAL STATEMENTS

# TEXAS GIGAPOP
# dba LONESTAR EDUCATION AND RESEARCH NETWORK

STATEMENT OF FINANCIAL POSITION

December 31, 2004

| | |
|---|---|
| **ASSETS** | |
| Current assets | |
| Accounts receivable | |
| Membership dues | $ 100,010 |
| Funds held by others (note 2) | 691,911 |
| Total current assets | 791,921 |
| Fixed assets | |
| Furniture and Equipment | 7,105 |
| Less accumulated depreciation | ( 572) |
| Net fixed assets | 6,533 |
| Total assets | $ 798,454 |
| **LIABILITIES AND NET ASSETS** | |
| Current liabilities | |
| Accounts payable | 43,180 |
| Deferred revenue | 283,778 |
| Total current liabilities | 326,958 |
| Commitments (note 3) | |
| Total liabilities | 326,958 |
| Net assets | |
| Unrestricted net assets | 471,496 |
| Temporarily restricted net assets (note 4) | - |
| Permanently restricted net assets (note 5) | - |
| Total net assets | 471,496 |
| Total liabilities and net assets | $ 798,454 |

See accompanying Notes to Financial Statements.

# TEXAS GIGAPOP
# dba LONESTAR EDUCATION AND RESEARCH NETWORK

STATEMENT OF ACTIVITIES

Year Ended December 31, 2004

| | Current Operating Funds | | | |
|---|---|---|---|---|
| | Unrestricted | Temporarily Restricted | Permanently Restricted | Total |
| **REVENUES AND OTHER SUPPORT** | | | | |
| Membership assessments | $ 621,667 | $ - | $ - | $ 621,667 |
| NLR assessments | 1,000,000 | - | - | 1,000,000 |
| Total revenues | 1,621,667 | - | - | 1,621,667 |
| **EXPENSES** | | | | |
| Program expenses | 1,031,135 | - | - | 1,031,135 |
| Supporting services | | | | |
| Management & general | 119,036 | - | - | 119,036 |
| Total expenses | 1,150,171 | - | - | 1,150,171 |
| **CHANGE IN NET ASSETS** (decrease) | 471,496 | - | - | 471,496 |
| **NET ASSETS** | | | | |
| Beginning of year | - | - | - | - |
| **End of Year** | $ 471,496 | $ - | $ - | $ 471,496 |

See accompanying Notes to Financial Statements

**TEXAS GIGAPOP**
**dba LONESTAR EDUCATION AND RESEARCH NETWORK**

STATEMENT OF CASH FLOWS

Year Ended December 31, 2004

| | |
|---|---|
| **CASH FLOWS PROVIDED BY (USED BY) OPERATING ACTIVITIES** | |
| Change in net assets (decrease) | $ 471,496 |
| Adjustments to reconcile change in net assets to net cash provided by operating activities | |
| Amortization/Depreciation | 572 |
| (Increase) decrease in operating assets | |
| Accounts receivable | (100,010) |
| Funds held by others | (691,911) |
| Increase (decrease) in operating liabilities | |
| Accounts payable | 43,180 |
| Deferred revenue | 283,778 |
| Net cash provided by (used by) operating activities | 7,105 |
| **CASH FLOWS PROVIDED BY (USED BY) INVESTING ACTIVITIES** | |
| Purchase of intangible/fixed assets | (7,105) |
| Net cash provided by (used by) investing activities | (7,105) |
| **CASH FLOWS PROVIDED BY (USED BY) FINANCING ACTIVITIES** | |
| Increase in long term obligations | - |
| **NET INCREASE IN CASH** | - |
| **CASH** | |
| Beginning of year | - |
| **End of year** | $ - |

See accompanying Notes to Financial Statements

**DESCRIPTION OF THE ORGANIZATION**

Texas GigaPOP dba Lonestar Education And Research Network (LEARN) is a Texas non-profit corporation established in January 2001. The primary purpose of the Organization is a collaboration of Texas higher education institutions that support their research, education, health care and public service missions through the innovative development, operation and utilization of advanced statewide networking, access to global resources and related services.

LEARN is exempt from Federal income tax under Internal Revenue Code Section 501(c)(3) for income related to its exempt purpose. LEARN is classified by the Internal Revenue Service as an organization other than a private foundation.

**NOTE 1: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Accounting Estimates-**The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates. The financial statements include some amounts that are based on management's best estimates and judgments.

**Accounting Method-**The financial statements have been prepared using the accrual basis method of accounting, which includes reporting revenues and other support and related accounts receivable when earned. Contributions are considered to be available for unrestricted use unless specifically restricted by the donor. Amounts received that are restricted for future periods or for specific purposes are reported as temporarily restricted or permanently restricted and increases those net asset classes. Expenses and the related accounts payable are reported when an obligation is incurred, regardless of when cash is disbursed. All expenses are reported as reductions in unrestricted net assets.

**Net Assets Classes-**LEARN reports the following net assets classes:

Permanently restricted net assets– the part of the net assets of a not-for-profit organization resulting from contributions whose use by an organization is limited by donor-imposed stipulations that neither expire by passage of time nor can be fulfilled or otherwise removed by actions of the organization are considered permanently restricted net assets. An example of a permanently restricted net asset would be the donation of funds (or other assets) to an Organization in which the donor imposed a restriction that the funds not be expended, but that the organization would be permitted to use or expend part or all of the income (or other economic benefit) derived from the donation.

Temporarily restricted net assets- not-for-profit organizations receive contributions and other resources whose use is limited by stipulations that are more specific than the broad limits resulting from the nature and purpose of the organization and its programs. Resources (net assets) with such stipulations that either expire by passage of time or can be fulfilled by actions of an organization are reported as temporarily restricted net assets.

Unrestricted net assets are composed of all resources not included in the permanently restricted net assets or the temporarily restricted net assets categories. While these resources (net assets) are reported as unrestricted, LEARN manages them in compliance with its exempt purposes, Board designations, legal requirements, and contractual obligations.

**Accounts receivable-**Membership dues are valued using an allowance for doubtful accounts. Accounts are considered past due after 30 days of not receiving payments. No allowance for doubtful accounts is considered necessary at year end. Allowance for doubtful accounts is considered an accounting estimate.

**NOTE 1: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES** (continued)

**Fixed assets-**Fixed assets are capitalized at cost if the estimated useful service life of the item is more than one year and the cost of the item is over $1,000. Donations of fixed assets are recorded as support at their estimated fair value at the date of donation. Depreciation of fixed assets is computed over the estimated useful service life of the asset (generally 3 years) using the straight line method of computation. Depreciation expense and accumulated depreciation reported in the financial statements are considered an accounting estimate.

**Allocation of costs-**LEARN allocates common costs between program services and management and general by management's judgment of the estimated costs related to LEARN's activities. The estimates are reviewed periodically, and the allocation of costs revised, if necessary, to reflect changes in the activities of the Organization.

**NOTE 2: FUNDS HELD BY OTHERS-**are Organization funds held by University of Texas Medical Branch-Galveston (UTMB) and The University of Texas at Austin (UT). UTMB served as the fiscal agent for LEARN during 2004. All monies received were deposited into UTMB's bank accounts and held for the benefit of LEARN. All expenses were paid on behalf of LEARN by UTMB from LEARN resources. All accounting was done by UTMB. LEARN deposits funds with UT for payment of expenses such as telephone, postage, etc. as these expenses come due.

**NOTE 3: COMMITMENTS**

Additional information with respect to commitments of the Organization follows:

As part of LEARN's membership in National LamdaRail, Inc., the Organization has committed to a $5,000,000 contribution over 5 years with the first $1,000,000 payment due in 2004 and an additional $1,000,000 payment due in 2005, 2006, 2007 and 2008.

**NOTE 4: TEMPORARILY RESTRICTED NET ASSETS**

At year end, LEARN had no temporarily restricted net assets.

**NOTE 5: PERMANENTLY RESTRICTED NET ASSETS**

At year end, LEARN had no permanently restricted net assets.

# Appendix 7. LEARN Strategic Plan

# TX-LEARN


LEARN: Lonestar Education and Research Network

P.O. Box 7969

Austin, TX. 78713-7969

(512) 475-8905

(512) 232-9809

info@tx-learn.net

**Table of Contents**

# 1. Executive Summary

The Lonestar Education and Research Network (LEARN) is a collaborative effort among Texas institutions of higher education to provide high speed, state of the art research and education networks. This strategic plan was developed by a committee of the LEARN Board and approved by Board members. The collaborative process utilized in the development of the plan promoted consensus building and alignment of members' support of common objectives. The purpose of this document is to outline the LEARN Strategic Plan for the establishment of services, management, and over-arching philosophies. The objective of this Strategic Plan is to provide a framework and guidelines for directing both strategic and operational planning and decision making.

The components of the plan include organization history, summary of state and national provider networks, success factors, products and services, membership, management, and conclusion. The stated philosophies reflect the bylaws and resolutions of the LEARN Board and the State of Texas requirements associated with its initial funding.

This document represents the first version of the LEARN Strategic Plan with anticipated updates as LEARN matures organizationally. The Strategic Plan will be reviewed and updated on an annual basis to maintain its relevance for LEARN initiatives.

# 2. Organizational History

The LoneStar Education and Research Network (LEARN) was created in December, 2003, as a non-profit coalition of Texas institutions of higher education interested in establishing a state high-speed research and education network. A second objective of LEARN was to connect to, and participate in governance of, National LambdaRail (NLR) launched in September, 2003 with the intention of building and operating an advanced optical fiber network around the U.S.

The genesis of the Lonestar Education And Research Network (LEARN) could fairly be said to have been a meeting called by Dan Updegrove, VP for Information Technology at the University of Texas at Austin, and Dick Ewing, VP for Research at Texas A&M, in Austin on November 13, 2002. At that meeting, Tom West, president of the Corporation for Educational Networking California (CENIC) and co-founder of NLR, spoke to CIOs and directors of data networking at sixteen Texas universities and academic medical centers

West described the success of CENIC in unifying higher education networking in California and its vision of creating a statewide optical fiber network. CENIC was also one of the founding partners that had invested $5M each over five years to construct and operate NLR. West advised the group that for $5M Texas could participate in NLR, i.e., guarantee a point of presence on the national backbone as well as a seat on the governing board. By a non-binding straw vote that day, the representatives agreed on a two part response to West's challenge: seek university subscriptions for the $1M per year NLR investment and seek state funding to underwrite a state fiber backbone. Implicit in this response was the need for a unifying organization – to receive state funds, to build and operate the backbone network, and to represent Texas in NLR.

Texas higher education was fortunate to have both deep expertise in data networking and an overlapping set of organizations that had developed collaborative relationships over the years. As of November 2002, these organizations included:

- Greater Austin Area Telecommunications Network (GAATN), which provides a fiber optic network connecting Austin Community College, UT Austin, city, county, and state government

- Northeast Texas Consortium (NETnet), which serves 15 higher education institutions from a headquarter in Tyler

- North Texas GigaPOP (NTGP), providing Internet2 Abilene access and other services to SMU, TCU, UNT, UT Arlington, and UT Dallas (and currently UT Southwestern Medical Center and the National Weather Service)

- Texas GigaPOP (TGP), providing Internet2 Abilene access and other services to BCM, Rice, SFASU, TAMU, and UH, with additional board members from TTU and UT Austin (TGP's legal structure formed the basis for LEARN, while its technical functions have been subsumed by a new organization, Southeast Texas GigaPOP -- SETGP)

- Texas Higher Education Network (THEnet), a statewide network operated by UT System connecting most UT campuses, additional colleges, ISDs, and others

- Texas Internet Grid for Research & Education (TIGRE), a multi-university effort to develop and operate a high-performance computational grid. Founding members included Rice, TAMU, TTU, UH, and UT Austin

- Texas Sponsored Education Group Participants partners (TexasSEGP), NTGP, SETGP, TTU, UT Austin, and UT El Paso)

- Trans-Texas Videoconference Network (TTVN), a wide area network serving TAMU System campuses, other colleges, ISDs, and state agencies

What higher education networking lacked was unity. For example, in 2002 there were six separate OC3 connections to the Internet2 Abilene POP in Houston.

In 2003, discussions were held in various venues regarding organization, funding, governance, construction and operation of the state backbone, and connecting to NLR. Other means of gathering consensus about the structure of a statewide networking organization included a conference call arranged by the President of UT Austin involving the senior management of the majority of the research universities in the state in August 2003, and a meeting of the governing boards of the Houston Gigapop and the North Texas Gigapop on September 4, 2003 at the DFW Airport.

On October 7, 2003, a meeting of all potential member institutions of the statewide network organization was convened at the Dallas airport: that meeting concluded with general agreement that indeed the institutions could and would participate in an organization dedicated to high performance networking for Texas' higher education community. By late that month, 22 institutions of higher education in Texas had each committed $20,000 per year for two years to fund a management structure for the "new" organization, which would actually be a repurposing of the Texas Gigapop, since that organization already had by-laws conformable to the mission of the new organization and its ability to accept funds from the state, and had already applied for 501(c)(3) non-profit status.

In November and December 2003 and into January 2004, elections were held for officers of the reconstituted Texas Gigapop, and the reins of the new organization were turned over to the new officers on January 29th, 2004 at a meeting on the SMU campus in Dallas. Also at that meeting, the name of the new organization was adopted: "LEARN: Lonestar Education And Research Network," (suggested by Suzanne Montague of UT Arlington.) Eight other institutions had committed to joining LEARN prior to that meeting, so LEARN was officially launched with a 30-member Board.

The initial approach for state support was to engage the Telecommunications Infrastructure Fund (TIF), which had previously commissioned TAMU and UT to produce a “Scoping Study” for a statewide telecommunications infrastructure. Promising discussions with TIF regarding a $7.5M grant were cut short when a state budget crisis led the Governor to abolish the agency in spring 2003. In summer 2003, the $10M two-part grant was endorsed by the Legislature, although under the auspices of the Texas Enterprise Fund (TEF). After protracted study and discussion, the Governor and Lieutenant Governor, on the occasion of the Internet2 member meeting in Austin, announced state support for the LEARN backbone in the amount $7.281M (plus a companion $2.5M grant to the five universities in TIGRE for a grid computing collaborative that was projected to require a high performance network). The funding was actually received starting in March, 2005.

The TEF grant provided capital funds to acquire dark fiber and equipment (or leased wavelengths where fiber and equipment were too costly) for a “triangle” backbone connecting Dallas, College Station, Houston, San Antonio, and Austin; plus additional

connections to El Paso, Lubbock, Denton, Tyler/Longview, Beaumont, Galveston, and Corpus Christi. Aside from marginal transition expenses, the grant was not be used for operating costs. In addition the state requested the right to obtain long-haul capacity on the network for agency data traffic.

**NLR**

Committing $5M over 5 years to NLR was problematic until it could be determined if and when state funding would be secured for the backbone, since NLR would commit to only one point of presence in Texas. Moreover a number of LEARN members were not committed, at least initially, to sharing in the cost of a state-of-the-art national research infrastructure. After months of discussion, a progressive subscription model was adopted; wherein those LEARN members interested in access to NLR services would contribute to the 1M annual commitment in proportion to their annual research expenditures, with a minimum fee of $10,000. The commitment is for five years, with the fees recalculated each year based on the latest research expenditure reports. Other LEARN members are welcome to become NLR "Funding Participants," but only upon payment of all retroactive fees.

The national topology first envisioned by NLR would have provided a connection in Dallas on fiber obtained from Level3 Communications connecting Denver (via Stratford) with Atlanta (via Memphis, Nashville, and Birmingham). At Stratford another path would have bypassed El Paso on the way to Los Angeles. Later, when Louisiana, Oklahoma, and New Mexico committed to NLR, the "Phase 2" (southern) topology was changed substantially: Houston would be the node offering connection at layers 1, 2, and 3, via Wiltel fiber running east to Baton Rouge and Jacksonville; north to Tulsa and Kansas City; and west to El Paso and Los Angeles. An additional north-south route would link El Paso, Albuquerque, and Denver. In this topology, Texas also obtained layer-1 points of presence in Dallas, San Antonio, and El Paso. This then enabled LEARN to obtain a 10 Gbps leased wavelength (lambda) to El Paso at very reasonable cost.

Finally, it should be noted that in September, 2003, the Texas Advanced Computing Center (TACC) at UT Austin received a five-year grant to connect to the NSF TeraGrid node in Chicago. After negotiation among LEARN, NLR, NSF, and UT, the grant was restructured to enable part of the funds to flow to NLR and part to support construction of the LEARN backbone.

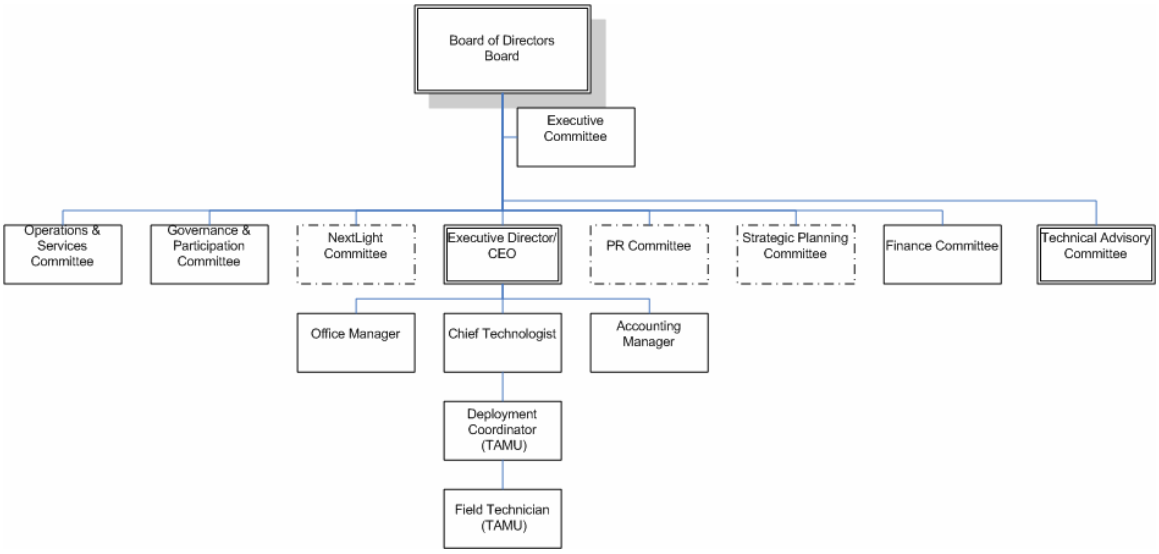
## *2.1. Organization*

LEARN is a 501c3 corporation governed by 33 member organizations. Each organization appoints a Director. The Directors annually elect the Board officers. Three standing board committees; Governance and Participation, Finance, and Operations and Services provide much of the leadership. The chairs of each of those committees are elected annually concurrent with the Chair-elect, Secretary and Treasurer and serve on an Executive Committee which is empowered to act in the absence of Board action. Additionally, twenty-four member organizations are also "funding participants" and collectively provide for LEARN's annual contribution to the National Lambda Rail Project.

## *2.2. Management*

At this writing, LEARN has three full-time staff members and a part-time accounting manager. The Executive Director was retained in July of 2004 and serves as the CEO of the corporation. An assistant fills the role of Office Manager from the LEARN

offices in Austin. The bookkeeper and accounting manager began serving half-time at the beginning of 2006 and now serves ¾ time as the network operation begins to provide services. The Chief Technical Officer began serving from a Dallas office in April 2006. LEARN also retains a consulting CPA to provide monthly review of fiscal matters and provide advice on an ongoing basis. At present, much of the work of LEARN is contributed by technical staff of Texas A&M University and the University of Texas System as well as a number LEARN participating organizations. Since inception, a Technical Advisory Group, consisting of senior delegates from each member institution, has been instrumental in designing the LEARN architecture, selecting vendors, and participating in the rollout of the network.




## *2.3. Financial*

LEARN maintains four funds – a program office fund, a State of Texas capital fund, an NLR fund and one for Network operations. The budgets for each fund are periodically reviewed by the finance committee and upon their recommendation, approved by the Board of Directors.

1) A program office fund

   Each member organization contributes $20,000 to the organization to provide for the general administrative costs of the organization. These funds provide for core staff contracts and support, legal and accounting expenses, memberships, meetings and general office expenses.

2) State of Texas Enterprise Fund.

   LEARN received one-time capital funding of $7.281 million from the Texas Enterprise Fund to begin building the actual optical network infrastructure of LEARN. The capital funds are used to purchase equipment, acquire rights to

optical fiber, lease facilities, contract for leased line services, and obtain other infrastructure elements as needed.

3) NLR fund.

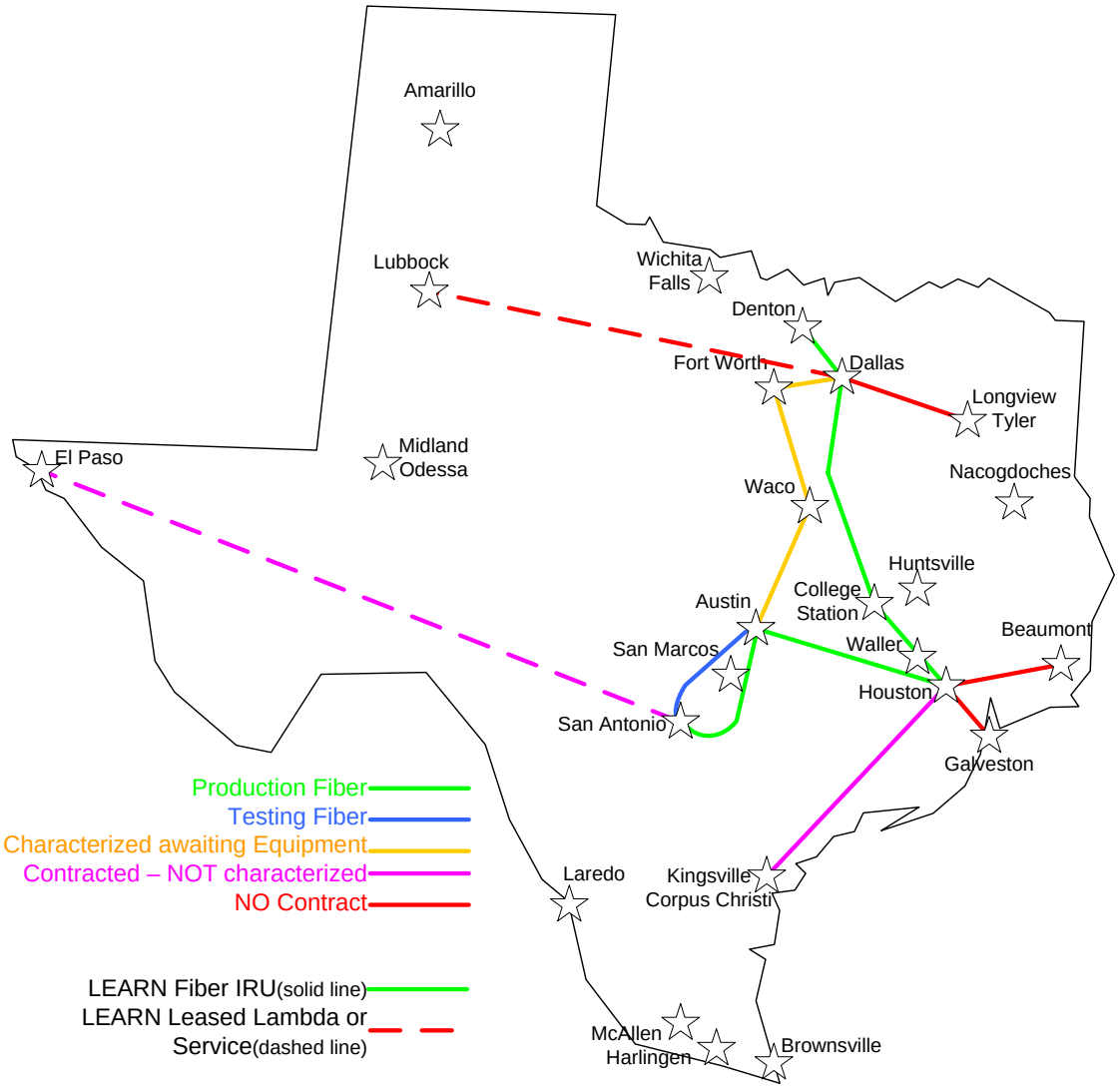
LEARN has committed to contribute 1 million per year for 5 years to support the building and operation of the National Lambda Rail. Twenty-four of the thirty-three member organization have agreed to participate in this project and make an annual contribution calculated as a base fee of 10,000 plus a fraction of the remaining 1 million based on the federal research dollars received by each institution in the previous year.

4) Network Operations

The State of Texas capital investment allows for some short-term, transitional network operating expense as the network is being built. Ongoing operation of the network will be funded by fees for services. The Board has approved an initial set of fees. We expect that the services offered and the fees for same will continue to evolve to provide for the ongoing operation of the network, staff required beyond the core program office staff above, and to provide for expansion of the network and equipment replacement.

## *2.4. Infrastructure*

The current state of the network is as shown in the figure below. At present, those cities shown as in production have available dedicated 1 or 10 gigabit layer 1 service between city pairs. The University of Texas and Texas A&M have loaned equipment to the project which will allow the network to be provide layer 2 and layer 3 services directly.




LEARN has an Indefeasible Right of Use (IRU) with Level(3) from Houston to Dallas to San Antonio and back to the origin in Houston. An IRU with Grande Communications provides a short segment in San Antonio. Denton and Corpus Christi are also served by Level(3) IRUs. The San Antonio to El Paso service is via a 5 year lease for 10 gigabit from the NLR. We expect to obtain IRUs for service to Galveston, Beaumont and Longview Tyler. At present, we are also committed to provide leased services to Lubbock, but continue to explore IRU alternatives. Those cities shown as stars, but with no network demonstrated, are among those that have been identified as communities LEARN anticipates will be part of a network expansion.

Verizon was the successful bidder for the original optronics for the LEARN network. To date, the optical backbone is equipped with Nortel optronics purchased from Verizon. At this writing, the TAG is evaluating alternative technologies (optical and layer2/3) for the remainder of the committed network.

Furthermore, LEARN continues to explore peering options to enhance network value for its member community. This includes traffic exchange arrangements with other Regional Optical Networks, and Internet Exchange Service Providers.

### *2.5. Objectives & Mission*

The objectives of LEARN are to:

1. Facilitate research among the participants to leverage assets and promote the establishment of partnership among diverse educational organizations.
2. Develop a fiber network that will provide a virtual environment for real time collaboration to facilitate communication, share data, and utilize video for real-time activities in research, education and health services.
3. Provide advanced network, pre market technologies to the member organizations.

The following Mission Statement was adopted by LEARN in December, 2004:

> *LEARN is a non-profit collaboration of Texas higher education institutions that supports their research, education, health care, and public service missions through the innovative development, operation and utilization of an advanced statewide data network, access to global resources, and related services.*

At that same meeting, LEARN agreed to the following Vision Statement:

> *To be the premier organization providing advanced data network services for research, education, health care and economic development throughout Texas. LEARN will be a national model for organizations that serve institutions of higher education. We will provide leadership in creating global networking initiatives.*

# 3. Summary of Texas Providers & Relationship to LEARN

While LEARN is unique in providing state-wide, fiber-based next generation networking services to its member organizations, there are a number of other providers of communications services within the State that are available to serve the overall needs of the research, education and health science communities. This cursory review describes those providers and services.

## *3.1. Public sector providers*

Texas has a number of public sector providers. The following are current providers of network services.

### *3.1.1. THEnet (www.the.net)*

The University of Texas System Office of Telecommunication Services (UT System OTS) operates the Texas Higher Education Network (THEnet). THEnet provides Internet access to UT System component institutions; to accredited, degree-granting educational institutions in Texas; and to public agencies at all levels of government in the State. They also provide Internet2 access to selected institutions through the SEGP program. It is expected that THEnet will use LEARN's backbone infrastructure.

### *3.1.2. TTVN (.ttvn.tamu.edu)*

TTVN is the wide area data and distance learning network for institutions, agencies, affiliated organizations of the Texas A&M University System. It is managed for the System by Texas A&M University (TAMUS) in College Station through the Associate Provost for Information Technology by the director of Educational Broadcast Services (EBS). TTVN provides Commodity Internet, Internet2, and Intranet data service connectivity to all institutions and agencies of the system. Data service connectivity to campus and agency sites range from single DS-1 connections, DS-3, and gigabit based ethernet located in all regions of the State. International locations in Mexico City and Doha, Qatar are also supplied services via Abilene connectivity.

Distance learning support services provided by TTVN include extensive H.323 IP videoconferencing, bridging, H.320 gateway, MPEG-2 gateway, and multimedia streaming services. Help desk and maintenance services are an integral aspect of the TTVN service offerings. In excess of 150 video sites are supported. Through parent organization, EBS a wide range of video related services is available to TAMUS and related entities. Services offered include 1080i based high definition video production, Ku satellite uplink, studio production, Non-Liner editing, and on-location video production.

TTVN currently utilizes the LEARN optical backbone for the core of its statewide network IP backbone infrastructure. Future use of LEARN will provide National Lamba Rail (NLR) connectivity to TAMUS institutions.

### *3.1.3. NETnet (www.netnet.org/)*

The Northeast Texas Consortium of Colleges and Universities is the collaborative effort of 15 higher education institutions to bring a wide range of instruction to fifty rural Northeast Texas counties containing 46% of the rural Texas population. The consortium provides a very broad spectrum of services ranging from the coordination of educational systems and network technologies through a regional OC-3 wireless Northeast Texas Network (NEtnet); to distance learning curriculum design and course development; to staff training and technical support; to grant and project management. The Northeast Texas Consortium supports distance learning programs at numerous organizations leading to careers in such high demand fields as nursing, biotechnology, manufacturing technology, criminal justice, multi-craft maintenance, IT, and environmental science.

Institutions supported by the consortium include:

- Angelina College
- Kilgore College
- Northeast Texas Community College
- Panola College
- Paris Junior College
- Sam Houston State University
- Stephen F. Austin State University
- Texarkana College
- Texas A&M University at Commerce
- Texas A&M University at Texarkana
- Texas State Technical College at Marshall
- Trinity Valley Community College
- Tyler Junior College
- University of Texas at Tyler
- University of Texas Health Science Center at Tyler

In addition to NETnet, the Consortium houses video and internet bridging services for two consortia of Texas Independent School Districts serving thirty-plus communities. It also supports the East Texas Interactive Health Network, serving hospitals throughout the East Texas Region.

The Northeast Texas Consortium is based at the University of Texas Health Science Center at Tyler. As a participant in LEARN, the Consortium will act as a network hub for the region, distributing connectivity via NETnet to each of its college or university sites.

### *3.1.4. Southeast Texas Gigapop*

The purpose of the SE Texas Gigapop is to provide efficient, cost effective, collaborative, and useful networking infrastructure to support the academic and research mission of the connecting institutions. The network infrastructure provides an aggregation point for member organizations to connect to Abilene for Internet2

resources and establishes a foundation for collaborative education and research initiatives. The members consist of Baylor College of Medicine, M.D. Anderson, University of Houston, Rice University, UT Health Science Center, Texas A&M and Stephen F Austin.

#### *3.1.5. North Texas GigaPOP*

The North Texas GigaPOP is an aggregation point for high speed data networking in the arena of higher education and academic research. A cooperative association of research-oriented institutions for the purpose of sharing connections to high-speed networking resources with it's membership including Southern Methodist University, Texas Christian University, University of North Texas, University of Texas Arlington, University of Texas Dallas, University of Texas Southwest Medical Center and NOAA National Weather Service. The Gigapop provides connectivity to a global research network through Internet2 via the Abilene network. The GigaPop is a member of the Internet2 community, which was designed to supplement the commercial Internet by bringing together academia, government services, and industry. The GigaPOP is physically located on the campus of The University of Texas at Dallas in Richardson, TX.

The North Texas GigaPOP currently provides the following services:

- Commodity Internet access
- Internet2 connectivity via the Abilene network
- BGP4 peering
- IPv4 multicast
- IPv6 connectivity
- Proactive Network Monitoring
- Statistical Traffic Graphs
- SEGP connectivity for Texas educational institutions

#### *3.1.6. State of Texas Department of Information Resources (DIR) (www.dir.state.tx.us/)*

The State of Texas, through its Department of Information Resources (DIR) provides a variety of services to state supported institutions. The services range from traditional telephony, commercial Internet service, as well as data processing.

LEARN has special relationship with DIR. During the LEARN quest for funding from the 78th Texas Legislature, DIR was asked to evaluate the LEARN request and provided analysis and endorsement to the State administration and legislature. As part of the formal agreement with the State, LEARN may provide new or make available existing capacity to DIR at such rates as may be mutually agreed. DIR may gain access to LEARN infrastructure for the purpose of providing services, where appropriate and cost effective, for its statutorily designated constituency. LEARN shall have no obligation to undertake any activity that could threaten or jeopardize its tax-exempt status, violate any laws of the State or of the United States of America, or violate the terms and provisions of its Articles of Incorporation, Bylaws, or any agreements to which it is a party.

LEARN is also required to provide quarterly briefings and an annual report to the DIR

#### *3.1.7. Texas Education Telecommunications Network (TETN)*

Texas Education Telecommunications Network (TETN) is a private video/data network among the twenty Texas Education Service Centers (ESC) and the Texas Education Agency. TETN provides a centralized video network to the 21 members and also serves as the primary path for school district video traffic moving between the ESC regional networks. TETN services include video capability among the 20 ESC networks and their 850+ school districts, toll-free calling between the ESCs and TEA, Internet2 connectivity, and electronic capturing/streaming of TETN conferences. Typical uses on TETN include administrative meetings with TEA, dual-credit and high school courses between ESCs, electronic field trips, and professional development courses resulting in certifications or degrees, and special projects.

The wide-area network is comprised of point-to-point T1s between the TETN hub and the 20 education service centers. A connection with the University of Texas Austin provides Internet2 access. Direction of TETN is vested in an eight member Governing Committee consisting of three members from the Texas Education Agency and five ESC Executive Directors. The TETN Office is located at Education Service Center 13 in Austin.

It is expected that TETN and the 20 ESC regional networks will use LEARN's backbone infrastructure to create a K-12 intranet among their school districts. By forming an intranet across the State, ESCs will gain access to broadband infrastructure needed for future growth of internet usage, on-line testing and demands for electronic instructional materials. ESCs will eliminate redundant connections to higher education institutions and begin planning collaborative projects that support exponential growth of network usage in school districts.

### *3.2. Summary of Commercial Providers*

#### *3.2.1. AT&T (formerly SBC)*

AT&T is the largest provider of voice service in Texas, and also provides residential DSL services as well as a number of private line offerings of interest to larger users. Of particular interest to the higher education community are specially tarrifed HB 2128 gigabit rates. These are services that are offered at significantly discounted rates which are used extensively by Educational entities not only to provide access to the LEARN network but also in support of Intra Institutional networks as well. Purchased services has increased dramatically since the inception of LEARN with, what looks like exponential growth in the next few years. The fiber based access services offered today include Gig-E-Man which is a gigabit private line, Opt-E-Man guaranteed switched service up to a gigabit in major metropolitan areas and CSME, non guaranteed switched services in non major metropolitan areas. There has even been some trial 10 Gigabit services under their Dec-E-Man service offering. While the extent of benefit of their new fiber to the curb services will be, there is little doubt that it will allow us to further leverage the benefits of LEARN. AT&T is also the major service provider of the state agency TEX-AN network. This network, under current legislation is able to provide services to TEX-AN in support of data center backup and disaster recovery operations. This could make AT&T a strategic partner of LEARN. In addition the former AT&T had offered dark fiber access to Regional

Optical Networks such as LEARN in support of their expansion efforts. This offer has been renewed under the new combined AT&T, SBC company.

#### *3.2.2. Verizon*

Verizon is the second largest Incumbent Local Exchange Carrier (ILEC) behind AT&T and has offered gigabit services to Educational entities within their serving areas under the TLS or Transparent LAN Services label. These services are also significantly discounted under HB2128 and have been used extensively for educational entities to build infrastructure within their Institutions. One of the limiting factors to TLS use as access to LEARN at this time is that all of the LEARN nodes but one are in AT&T serving areas. Negotiations are underway to be able to arrange for meet point circuits between AT&T and Verizon, which would eliminate that shortcoming. It is hoped that this capability will exist within the next 12 months. Verizon has been very aggressive in the fiber to the premise offering which, like AT&T's fiber offerings could revolutionize broadband access. Verizon has also shown the strength of partnering with carriers as the equipment provider of the first phase of Optical equipment for LEARN. Their experience in providing equipment that is not traditionally provided in higher education has proven to be invaluable.

#### *3.2.3. Other Local Exchange Carriers*

While Verizon and AT&T carry approximately 85% of the lines within the State of Texas, approximately 30% of the geographic area is supported by other ILECs. These ILECs include Sprint, Consolidated Communications (formerly TXU, Valor and others) to name a few. These companies represent our more rural and difficult to support Colleges and Universities and warrant additional efforts if we are going to be able to utilize their services in support of LEARN access. Many, if not all of them have a fiber based gigabit service, also at very competitive rates. Again the issue is arranging for the meet point provisioning of circuits.

#### *3.2.4. The Cable Companies*

The major television companies, such as Time Warner and Cox Cable are also supporting fiber based 100 Mbps and gigabit services, mostly in larger cities. Grande Communications serves some areas of Texas and has made dark fiber IRUs available to LEARN and members. These services are often available at competitive rates and offer the Universities and Colleges a choice.

#### *3.2.5. Metropolitan Dark Fiber Carriers*

In addition there are a few metropolitan dark fiber and service providers in the largest cities. They are often either owned by or associated with a major Interexchange carrier such as Level3 or Qwest and their footprint is typically limited to a few mile area within the downtown areas of the largest cities and does not touch all buildings within their footprint. Abovenet, who does business in Houston and Dallas is an example of such a firm.

# 4. LEARN relationship to national networks

### *4.1.1. Internet2 (www.internet2.edu)*

LEARN is an Affiliate member of Internet2. At present, LEARN does not directly provide connection to Abilene, the Internet2 network. 14 LEARN members are members of Internet2 and several additional higher education institutions and K-12 schools are provided Abilene connectivity through the SEGP program.

### *4.1.2. National Lambda Rail (NLR) (www.nlr.net)*

LEARN is a charter member of the NLR and has committed $5,000,000 over five years to its creation. At present, NLR has a full-service node in Houston, and some services available in Dallas, San Antonio and El Paso. LEARN shares collocation space with NLR along its Houston to Dallas path and leases a 10g service from NLR between San Antonio and El Paso. National LambdaRail is advancing the research, clinical, and educational goals of members and other institutions by establishing and maintaining a unique nationwide network infrastructure that is owned and controlled by the U.S. research community. Ownership of the underlying optical infrastructure ensures the research community unprecedented control and flexibility in meeting the requirements of the most advanced network applications and providing the resources demanded by cutting-edge network research.

**NOTE:** At present, Internet2 and NLR have engaged in merger discussions for approximately one year and at present, it appears there may be no immediate merger.

# 5. Keys to Success

As part of any Strategic Plan it is important to ascertain what will be the keys to success of the organization as well as with any product and service offerings. The following sections highlights what the LEARN Strategic Planning Committee views as the keys to success.

## *5.1. Key Values and Metrics of Performance:*

LEARN sees itself carrying out its Mission and fulfilling its Vision through three specific areas of focus - Organizational, Infrastructure, and Services. The following outline Key Values and Metrics of Performance for each of these areas:

### *5.1.1.* Organizational Key Values:

- Be guided by long term strategic plans that are collaborative and based on consensus
- Focus on community-based solutions that are inclusive and equitable.
- Establish budgets and priorities that are cost-effective and sustainable in the long term while at the same time focusing on cost-effective service to members
- Increase public awareness of network as a prominent resource for the future of education and research statewide
- Establish Acceptable Use Policy (AUP) for membership engagement and interaction

### *5.1.2. Organizational metrics:*

- Define percentage of organizational funding directed towards meeting customer/user needs
- Create sustainable funding models and budgets for LEARN
- Sustain membership as representative of the State of Texas
- Communicate clearly, accurately and in a timely fashion with members and to customers/user community
- Maintain active advisory groups
- Demonstrate effective use of funds received through:
    - number of users served
    - number of grants enabled by LEARN as well as the enhanced effectiveness/productivity as a result of LEARN
    - increased number of collaborative projects enabled by LEARN
- Evaluate membership AUP compliance

### *5.1.3. Infrastructure Key Values:*

- Provide pre-market leading edge, next generation technologies and associated services for Texas institutions that are efficient and meet the needs of our customers
- Provide a high performance, scalable, reliable, and secure network that is geographically accessible and dispersed
- Provide a network that is both physically and technically secure
- Implement solutions that are sustainable and viable

### *5.1.4. Infrastructure Measures of Performance*

- Meet multiple service level agreement metrics such as:
    - downtime
    - hours of usage
    - quality of service
- Illustrate network growth over time:
    - bandwidth
    - route miles
    - diversity of routes
    - number of members connected
    - number of new services provided
    - types of connections
    - Ability to grow and maintain sustainability without significant cost increases
    - Proactive forecast of customer and user needs
    - Comparison to services provided by other networks

### *5.1.5. Service Key Values:*

- Establish cost effective quality services that are accessible, sustainable and oriented to the needs of our member community
- Prioritize future offering of services through collaboration and consensus.
- Provide affordable services for member organizations
- Develop Service Level Agreements (SLA) as services are initiated

### *5.1.6. Service Metrics of Performance:*

- Meet service level agreements
- Evaluate customer satisfaction through an annual customer survey process
- Feedback to LEARN membership from Technical Advisory Group

- Timely communication to user community of service disruptions

## *5.2. Accountability and Reviews*

The LEARN organization must be effectively organized, financially viable, offer competitive services, and provide a sound technology infrastructure to its members. Through scheduled reviews conducted both by internal and external resources, LEARN can maintain its accountability. There are four specific areas that will need to be audited and where periodic reviews will be obtained. They are as follows:

1. Organizational Audit – To be conducted on a yearly basis
2. Financial Audit – To be conducted by an external party on a yearly basis
3. Peer Review – To be conducted by an external party and done every two years
4. Technical Advisory Group (TAG) Review – To be conducted as needed per LEARN project

# 6. Products & Services Offered

The following sections relate to the services that will be offered through LEARN and the rationale for providing these services.

## *6.1. Services Offered*

The following section outlines what services will be offered, how those services will be structured, and the rationale for providing these services.

### *6.1.1. Guiding Principles*

In deciding the products and services offered through LEARN it is important to understand the guiding principles that were used to determine what services would be offered.

There are three guiding principles that determine the services that LEARN will provide including:

- Collaboration – One of the primary missions of LEARN is to facilitate collaboration among Texas higher education institutions and partners
- Knowledge – With the promotion of collaboration between the Texas higher education institutions and partners will be an increase in knowledge that in turn, contributes to the overall knowledgebase for higher education and universities with large research missions.
- Technology – To be able to promote large scale collaboration and knowledge, LEARN must provide state of the art, competitive network accessibility.

Thus, in the determination of services, LEARN must always ask,

> "Will this service promote collaboration among universities and higher education institutions that will contribute to an increase in knowledge for those institutions, and will this service provide state of the art network accessibility that cannot be competitively provided by commercial entities?"

### *6.1.2. Measurement of Success*

In any product or service offering it is vitally important to be able to measure the success of those offerings. The following highlights the metrics that will be used to determine the success of any product or service offerings.

To ensure the success of LEARN, two core areas of measurement will be assessed:

a. Quantitative Measures
    i. Network availability
    ii. Utilization of total bandwidth and bandwidth utilization by institution

iii. Cost in comparison to commercial providers and/or other similar entities

iv. Research funding as a result of LEARN

v. Number of overall research projects that utilize services provided by LEARN

vi. Member savings

b. Qualitative Measures

i. Member satisfaction by each service provided by LEARN

ii. Significant research gains as a result of LEARN services

iii. Unique services provided by LEARN

#### *6.1.3. Supported Members*

Initially, there are three classes of membership that LEARN supports:

1. Governing – Includes higher education institutions
2. Non-Governing – Institutions with a relationship with an existing governing member and mission(s) related to the research or education mission(s) of the governing member.
3. Other – These include recognized institutions with a substantial research and education mission such as the National Weather Service, NASA, etc).

LEARN will always strive to be as inclusive as possible regarding the services provided, but will keep in mind the potential constraints imposed by the Texas Legislature, guiding principles, and economic feasibility.

#### *6.1.4. Initial Services*

Initially LEARN will focus on providing services to all current LEARN members. Specifically, LEARN will provide access among LEARN members providing 1 gb connectivity to city pairs as well as connectivity to I2 and NLR.

Once a foundation of service is established, LEARN will evaluate additional options such as commodity Internet, video transmission, etc. The LEARN Technology Advisory Group (TAG) will review any additional services and provide feedback.

#### *6.1.5. Levels of Service*

LEARN intends to provide both basic and tiering level of services. Basic connectivity will be provided within the state of Texas and to NLR and I2. Other services, or tiered services would be affected by levels of participation and affiliation with LEARN members, while other services will depend on the subscription of service (NASA, National Weather Service, guaranteed bandwidth, etc). The LEARN Technology Advisory Group (TAG) will review basic and tiered services and provide feedback on functionality, potential technological issues, capacity, and service level requirements needed for effective implementation.

## *6.2. Who Will Be Served by LEARN*

LEARN serves the education and research needs of higher education institutions who are members of LEARN and may provide access to its activities and services to any other non-profit or governmental entity (including the K-12 sector) that has an established collaborative educational or research relationship with a higher education member.

All current members of LEARN will be served initially. The Governance and Participation Committee will determine other members who may be supported after the initial services are complete, including:

- Higher Education (Colleges, Community Colleges, Universities, Health Science Centers)
- Federal government entities in Texas
- Entities that affiliate with other LEARN members
- Research institutions
- K-12 schools – only through existing alliances with LEARN members of statewide consortia or regional service centers.

### *6.2.1. Determination of Membership*

Membership to LEARN is determined by the mission of the organization as well as enabling legislation from the State of Texas. Additionally, LEARN feels that members must have a dedicated commitment to the organization.

### *6.2.2. Adding Members*

Upon approval by the current Board, membership in the organization is open to "institutions of higher education in Texas, consortia thereof."

### *6.2.3. Removing Members*

Members will be removed as a result of non-payment, misuse of network and/or other resources, or lack of participation in Board meetings. These members will be evaluated by the Governance & Participation Committee and recommendations for removal will be forwarded to the Executive Committee of the Board. The Executive Committee will review the recommendation and send to the full Board for approval if warranted.

### *6.2.4. Changes in Membership*

Changes should be addressed by the Board and communicated to the membership. If the changes results in a change in cost structure, the Operations and Services Committee should provide the information. If the change results in the loss of a service, the Board should be provided with alternatives by the Operations and Services Committee.

## 6.3. Management of Products and Services

The following section addresses how the LEARN products and services will be managed.

### 6.3.1. Daily Operations and Support

LEARN intends to have a Network Operations Center (NOC) and maintenance support on a 24x7 basis. The NOC may be staffed by additional internal LEARN staff, staff contracted from member institutions, or complete outsourcing.

### 6.3.2. LEARN Board Responsibilities

The LEARN Board will provide guidance, but not be involved in the daily operations of services. The LEARN Board will also have the role of approving contracts, annual contract reviews, annual review of services, and adherence to LEARN by-laws and policies.

### 6.3.3. Evaluation of Services

LEARN intends to evaluate services by way of utilizing established metrics, yearly reviews, and member surveys.

### 6.3.4. Retirement of Services

The mechanism whereby LEARN evaluates services to determine their feasibility for continued operation will be based on the following:

- A consistent schedule for reviewing services to determine their usage, value, and quality of service - The Operations and Services Committee will provide reports on the status of services and make recommendations, and the LEARN Board will determine future action.
- Lifecycling Technologies – Because technology is an evolving entity, LEARN will assess whether current services are still within their current lifecycle in terms of being technologically proficient and whether these services are feasible to continue.
- Economic Value – LEARN will evaluate the discontinuation of services based on their economic value to members of LEARN.

## 6.4. Product and Service Risks

Within any organizational functions, there are always certain risks that need to be acknowledged and anticipated. LEARN anticipates that the following are certain risks that may occur and effect what services and functions LEARN offers.

- Redundancy for certain members if they are already providing LEARN type services within their own outside organizations.
- Inadequate planning
- Leadership losses
- Loss of substantial funding support

#### *6.4.1. Competing Services*

In some areas where LEARN services will be provided, there are competing entities that may offer similar services. In the point-to-point city pair services there are other commercial vendors. Additionally, on some of the city pair paths, NLR offers similar services. Finally, as mentioned previously some member organizations already provide services similar to LEARN.

#### *6.4.2. Financial Risks*

One of the more important questions facing LEARN in its infancy is whether or not to sustain losses. Within this arena, LEARN determined that it is willing to sustain loss leaders only in the short term. It is imperative for the long term viability of LEARN to not maintain loss leaders.

### *6.5. Product and Service Costs*

Although the purpose of this strategic plan is to address the relevant costs for the products and services offered, it is not intended to be detailed financial document that will be provided later for the LEARN Finance Committee. The following sections highlight the general association concerning costs as they relate to the products and services that will be offered.

#### *6.5.1. General Costs*

The general associated costs for LEARN services will include any ongoing maintenance contracts as well as annual capital and operating expenses

Operating expenses and rate setting are reviewed on an annual basis in combination with a review of the annual LEARN Budget.

Overall, the LEARN Finance Committee is responsible for the initial development and review of the annual budget, evaluations of any significant expenses, as well as any significant change in expenses.

#### *6.5.2. Rate Establishment*

LEARN will determine the rate structure based on fees that will enable and sustain current and future operations.

Rate differentials will be established that reflect whether the customer is a governing board member or other entity. All rates will be reviewed annually by the LEARN Finance Committee as approved by the Board.

# 7. Conclusion

The LEARN Strategic Plan document has been a collaborative effort among current LEARN governing members whose mission is to provide state of the art, high speed network connectivity for research and education institutions. This document is meant to serve as an ongoing guideline for the facilitation of establishment of services, management, and general philosophies of the LEARN organization.

Over the next year, LEARN will evaluate the value of the strategic plan as it considers and references its tenets in operational and strategic initiatives. Based upon this assessment, the LEARN members will determine the need for its continued use and annual updates to reflect significant changes as LEARN matures. It is critically important that the LEARN Strategic Plan be utilized in all significant decision-making regarding the current and future growth of the organization. Current LEARN members should continually consult this documentation for at least the next 12 months. Through these efforts the value of this document and its collaborative framework can be fully assessed.

# 8. Appendix

# 9. Some comparable regional optical network models

In this section, phone and in person interviews will be conducted with already established regional networks regarding their startup and ongoing initiatives. A list of suggested questions has been developed to maintain consistency in the data gathering and is located in the sections below. Examples of interviewees would include those from CENIC and NYSERnet.

## *9.1. Implementation Approach*

The following are the suggested questions to be utilized regarding the implementation approach of other regional networks.

**Questions Regarding Implementation**

1. Please provide a brief history on how your organization was started.
2. When was the group started?
3. How was it started?
4. Why was the group formed?
5. What are the goals?

The following are the suggested questions to be utilized regarding the financial aspect of other regional networks.

**Questions Regarding Finances of Other Regional Networks**

1. How was the group initially funded?
2. What are the dues for membership?
3. How are revenues utilized?
4. What is the annual capital budget? Operating budget?
5. What has been the increase/decrease in revenues? Expenses? Why?
6. Do you allocate a budget for technology lifecycle? What is the lifecycle?
7. How do you plan to sustain operations?

## *9.3. Services*

The following are the suggested questions to be utilized regarding the services aspect of other regional networks.

**Questions Regarding Services of Other Regional Networks**

1. What guidelines do you have to determine your services?
2. What services do you offer?

### *9.4. Management*

The following are the suggested questions to be utilized regarding the management aspect of other regional networks.

**Questions Regarding Management of Other Regional Networks**

1. How is the organization established as an entity? For profit? Nonprofit?
2. What are the articles of incorporation?
3. What is the composition of your Board? Positions? Subcommittees? Bylaws?
4. How are you organized for daily operations? Anticipated change over the next three years?
5. If you had to do this over again, what would you do differently?

### *9.5. Critical Success Factors*

The following are the suggested questions to be utilized regarding the critical success factors aspect of other regional networks.

**Questions Regarding Critical Success Factors of Other Regional Networks**

1. What do you view as the Critical Success factors?

# 10. 2005 Strategic Planning Committee Working Papers

**LEARN Strategic Plan**

**Goals and Benchmarks**

**2/16/05**

**GOALS**

**Short Term (1 Year)**

- Completion of Phase I
  - Lit “Triangle”
  - Lit Lambdas
  - Connection in line with the map (?)
  - Connection to NLR
- Initiate Next Light planning – (The "Next Light" ad hoc committee was established in February, 2005, to make recommendations on future service delivery to unserved or underserved LEARN member institutions. Initial recommendations will be put forward in 2006. See "Medium Term" goals.)
- Services
  - TBD from O&S committee
- Initiate Evaluation of Consolidation, Aggregation Opportunities, etc.
  - I2
  - TTVN, THENET
  - Data centers
- Major research projects served
  - TEra grid
  - HiPCAT and other grid computing initiatives
  - LHC/CERN Center in Arlington
  - (CONACYT Projects?)
  - Other?
- Education, Health, Others?
  - Identify Clinical Collaboration opportunities; Data base?
  - Educational with Mexico
  - Other

- PR and Communication Plan(s) operational
- Operational Plan in place (SLA's, Support Model, Change Management, etc)
- Business Model with Operational Metrics in place.
- First Draft of Sustainability Model(s).

**Medium Term (2 years)**

- Phase II; "Next Light" Committee – (Once service is established on the initial LEARN footprint, LEARN will investigate ways of (a) providing service to LEARN member institutions not on the initial topology, (b) providing alternate pathways to LEARN member institutions located at endpoints of the topology, and (c) acquiring dark fiber to replace leased lambdas to LEARN member institutions. The "Next Light" ad hoc committee, established in 2005, will make recommendations for services and capital funding, and work with the Operations and Services standing committee to recommend service pricing.)
    - Implement recommendations of Committee
    - Other
- Services TBD by Committee
- Finalized Sustainability Model
- New Members
    - Educational Intranet/SEGP Collaborations
    - Other non-member institutions
- New Initiatives using fiber/network capacity
    - Seed grants for use of LEARN
        - Start up funding/matching
- Form Research Advisory Group – (To ensure that the services provided by LEARN match the requirements of LEARN's primary constituency, a Research Advisory Group will be formed in 2006. LEARN's Governance and Participation standing committee will make recommendations for: rules for nominating members, facilitation of an organizational meeting, and formalization a communication structure between the researchers and the LEARN Board of Directors.)
- Form Education Advisory Group (K-20)
- Form Health Services Advisory Committee
- Economic Development:
    - Enterprise fund
    - Emerging Technologies Fund (Initiatives similar to seed grants?)
        - Biotech
        - Energy
        - Semiconductor
        - Nano/MEMS

- Identify Early Use of Advanced Networking—security, sensor arrays, communication, “shrimps”; etc
- Establish appropriate operational/performance/quality metrics – (See earlier suggestions. I think this should be sooner rather than later).
- Further evolution of Communication/PR plans
    - Federal Labs
    - National/International initiatives
- Growing our intellectual capital
    - Network conference on lessons learned?
    - Faculty, staff, researchers interactions
    - Summer institutes? Workshops?
- Establish 2-3 Initiatives with the Private Sector (telecoms, advanced tech, defense, energy, sports, etc.)
    - Broadband to the home?
    - Workforce training?
    - Consider corporate membership

**Long Term (5 Years)**

- Sustainability—funding (I’m not sure I understand what this means. Is this the plan or is sustainability operational here?)
    - Grants
    - Service fees
    - State?
- Services?
- Change cultural environment at IHE’s—so faculty know what is LEARN, I2, etc.
- Development of collaborative tools
    - Video white boards
    - Desktop VC
    - Other
- Established as a national regional network model

**Benchmarks:**

**Short Term:**

- Completion of Triangle
- Completion of Lambdas
- Connection to NLR
- Research Projects using network
- Other?

**Medium Term:**

- Phase II begun
- Tech plan completed
- Services established w/at least research and one other underway.
- Part of Emerging Tech plan
- Other?

**Long Term**:

- Sustainability assured
- Services to all client community created and underway
- State and National model established
- Other?

# 11. Board Resolutions

The following resolution is suggested by the Governance and Participation Committee:

*Resolved that LEARN establish an audit committee to monitor the activities of the independent auditor and help facilitate the process of completing a CY 2005 audited financial report for the board. The committee will be composed of three board members that are not members of either the executive committee or the finance committee, elected for staggered terms (initially: 1yr, 2yr and 3yr terms). The three elected members of the ad-hoc board committee are also charged with selecting an additional individual not directly associated with LEARN to serve as an independent advisor to the audit process.*

The Governance and Participation Committee suggest that the following bylaws amendment be considered by the Board of Directors:

*The LEARN board will establish an audit committee to aid in the selection and monitor the activities of an independent auditor, and help facilitate the process of completing an annual audited financial report for the board. The committee will be composed of three board members that are not members of either the executive committee or the finance committee, elected for staggered terms subsequent to the election of board officers at the annual board meeting. The audit committee is also charged with selecting an additional individual, not directly associated with LEARN to serve as an independent advisor to the audit process."*

## *11.1. Board Resolution on Scope of LEARN*

*Recognizing the responsibility of LEARN to serve the needs and support the growth of higher education in the entire state of Texas, the LEARN Board endorsed a set of the recommendations for eventual expansion of the LEARN network presented at the August 17, 2005 meeting of the LEARN Board by the Next Light subcommittee of the Board. Those recommendations suggest that LEARN target, in two phases, services to additional regions in Texas . . . .*

# 12. Strategic Development of Products/Services

The following sections will address the strategic development of each product/service offering. These section details the specifics of how each product/service offering will be implemented, managed, marketed, operated, and what will be the important milestones. This section requires additional research and input from the various committees of the LEARN Board before development and implementation can be initiated.

### *12.1. Financial*

### *12.2. Marketing*

### *12.3. Operations*

### *12.4. Milestones*

### *12.5. Infrastructure*

# 13. Area Networks and Consortiums

| Network | Name | Website | Area Served | Higher Ed Served |
|---|---|---|---|---|
| BellNet | Bell County Network for Educational Technology | http://bellnetweb.brc.tamus.edu/Infrastructure/bellnet_infrastructure.htm | Central | TAMU Killeen<br>Temple Junior College<br>Central Texas College<br>McClennon CC<br>Hill College |
| Central Texas | Central Texas Educational Network | http://www.cten.net/about.htm | Central | TSTC - Waco<br>Navarro CC |
| GAATN | Greater Austin Area Telecommunications Network | http://www.gaatn.org/ | Central | Austin Community College<br>UT Austin |
| GCEN | Gulf Coast Network Consortium | No website | Gulf Cost | UH System<br>Houston CCD<br>Brazosport CC |
| ORION | The Orion Project | http://www.epcc.edu/partnerships/orion.cfm | West | El Paso CC<br>UT El Paso |
| SWTNet | Southwest Texas Network | http://www.esc20.net/distancelearning/netvision20_map.pdf<br>http://www.swtjc.cc.tx.us/uvalde/blainet3/swtnet/swtnet.htm | South Central | UT San Antonio<br>Alamo CCD<br>Our Lady of the Lake U |
| TETN | Texas Education Telecommunications Network | http://www.tetn.net/<br>Region Contacts: http://tetn.esc13.net/RegionalMaps.html | Statewide | |
| TSTC WAN | TSTC Wide Area Network | | Statewide | TSTC - Waco<br>TSTC - West Texas<br>TSTC - Marshall<br>TSTC - Harlingen |

| | | | | |
|---|---|---|---|---|
| West Texas | West Texas Technical Consortium | http://admin.esc14.net/webs/ssim/membership.htm | West | Abilene Christian University<br>Cisco Junior College<br>Hardin-Simmons University<br>Howard Payne University<br>McMurry University<br>Texas State Technical College - West Texas<br>Texas Tech University<br>Western Texas College |