



## Louisiana Department of Environmental Quality

### A Network for a Reengineered Department

The Louisiana Department of Environmental Quality's (DEQ) primary responsibility is to protect the state's environment and to assist with the management of all environmental concerns. DEQ accomplishes this goal by working closely with other

**Industry:**

Government

**Number of Nodes:**

More than 1,000 in 12 offices throughout Louisiana

**Services:**

Protecting the Louisiana environment and the health of the state's residents

**Challenge:**

Departmental reengineering included several critical bandwidth-intensive applications, which created the need for a more robust network infrastructure

**Solution:**

Enterasys Gigabit Ethernet network featuring X-Pedition™ routers on the backbone and Matrix™ switches in the wiring closet

**Benefits:**

- Wire-speed throughput handles the most bandwidth-intensive applications including converged voice and video
- Pinpoint application control inherent in X-Pedition and Matrix ensures that even remote offices have on-demand access to the applications they need
- Multi-technology support allows DEQ to fully integrate their LAN and WAN environments (FDDI, Frame Relay, PPP, NMLI) under one system
- Scalability and interoperability of the solution will seamlessly accommodate new applications while protecting existing investments

state agencies that oversee wildlife and fisheries, parks and recreation, wetlands, scenic streams, drinking water, and agriculture and forestry. The Department also responds to environmental emergencies, addresses

citizens' complaints, and strives to raise public awareness about such areas as recycling and litter control, air quality and toxics, sewage and industrial wastewater, wetlands and general hydrogeologic concerns.

Since its creation in 1984, DEQ has grown from 350 employees to more than 1,000. The majority of these employees presently works at the Department's headquarters in Baton Rouge, while the remainder are scattered throughout 11 offices around the state. The Department's greatest resource is its employees—the expertise they bring to the job and their dedication to protecting Louisiana's environment and the health of its residents. Most of DEQ's staff are degreed, boasting MSs and PhDs; and many have achieved national recognition as experts in the field of environmental quality and are sought after as presenters for conferences, seminars and symposia.

In October 1997, internal teams were empowered to recommend ways to improve short- and long-term permitting, surveillance, enforcement, strategic planning and remediation, while ensuring optimal use of available resources. These teams were also tasked to identify and pursue mechanisms that would improve overall communication, internally and externally. In recent months, the teams focused heavily on the DEQ's information system as a way to fully execute the redesigned processes and reap the rewards of reengineering.

**The Challenge:****Support More Applications, Reduce Time and Expense**

To ensure the smoothest reengineering process possible, the DEQ needed to link and integrate numerous information system capabilities onto the same network. DEQ's network must not only support Internet access, its own intranet and e-mail access, as well as file and print services, but also the newly introduced Integrated Data Management System (IDMS). This system, which enables the Department to consolidate information, includes the following bandwidth-intensive components:

- Document Management System—This will allow the Department to become paperless. All incoming mail will come to a single location, be scanned into a document management system, and then forwarded to the appropriate personnel or functional area electronically. The Department is in the process of converting all paper documents to

electronic images that will be accessible via DEQ's intranet. Only three other states have implemented similar electronic filing systems.

- LABWORKS Enterprise—The Laboratory Information Management System for the Air and Water Laboratories provides automated interfaces between instrumentation and analytical systems and automated tracking of sample data and QA/QC.
- TerraBase—This is an analytical/validation database system with automatic upload of laboratory analyses, submitted laboratory data, data validation and a GIS interface. This system serves as a repository for all analytical data.
- Enhanced GIS Capabilities—These capabilities include developing spatial data coverage libraries, 3-D display modeling of geo-spatial data, remote sensing, obtaining GPS coordinates for all sites, and providing access to GIS maps via the Internet.
- TEMPO (Tools for Environmental Management and Protection Organizations)—This system will allow the Department to perform the majority of its business processes (permitting, surveillance, enforcement and remediation) in a single, integrated system.

And of course, like most state agencies, DEQ also had to mind the bottom line to ensure that its network would cost-effectively accommodate these applications and protect their investments for the long run.

### **The Solution:**

#### **A Quality Infrastructure to Fit a Growing Environment**

After evaluating the existing network, it quickly became apparent to DEQ that a major upgrade would be essential to support the IDMS and other applications. An informal proposal was sent out and DEQ met with several vendors, including Cisco, 3Com, Lucent and Enterasys Networks™. Both technology and a previous track record proved to be the deciding factors in choosing Enterasys. “We’d worked with Enterasys in the past,” explained DEQ network technician George Pintado. “We were impressed by how little downtime would be required during the initial installation and with the reliability of the products. And, the service provided by their people was simply outstanding.”

Richard Silverman, DEQ's IT technical support supervisor, agreed. “When I came to DEQ nearly five years ago, everyone here was singing the praises of Cabletron. When it came time to choose the best network provider for our upgrades, I saw no reason to fix what wasn't broken. Cabletron and now Enterasys made the choice easy.”

The technologies employed in DEQ's LAN and WAN include 10/100 Ethernet, Gigabit Ethernet, point-to-point and workgroup wireless, FDDI, Frame Relay, NMLI and PPP. DEQ originally had an FDDI backbone and shared access hubs. This configuration was replaced by a Gigabit Ethernet backbone featuring the X-Pedition Router 8600 (SSR-16) and dedicated switching through the use of Enterasys' Matrix E6 wiring closet switches. In addition, most of the Department's servers were upgraded to support Gigabit Ethernet. The SSR-16 in the data center also links the Department's file, print and application servers. DEQ's statewide WAN is routed through an X-Pedition 2000, which supports a 45 Mbps statewide Frame Relay connection and a 100 Mbps NMLI connection to Baton Rouge. The X-Pedition is in turn linked back to the central switch.

“Enterasys has provided a high-performance, robust network,” said Silverman. “The network routing and configuration are easy to manage, and the infrastructure that's now in place makes it possible for us to fully implement our IT reengineering applications.”

The end-to-end Enterasys enterprise-wide network supports the applications that DEQ requires to complete its reengineering. By facilitating the delivery of data and services internally, to the state's citizens, and to other state agencies, DEQ's new applications have greatly enhanced the Department's overall communications capabilities. Ultimately, DEQ's redesigned processes, new organizational structure and information management systems will greatly improve the quality and timeliness of services provided by the agency. Continuous performance measurement will allow DEQ to refine and further improve all processes—while still ensuring that the existing infrastructure remains intact for years to come.

### **The Future:**

#### **Move Forward, Support More Users and Applications—Never Look Back**

Accelerated growth is anticipated as DEQ ramps up its IDMS and transitions to a totally digital file system. The Department is also planning to roll out video conferencing in the future. In addition, DEQ plans to relocate their offices to downtown Baton Rouge in 2002-2003, and the new location will include 10 floors with 20 telecommunications rooms. DEQ plans to purchase several additional switches for the new site.

“We want to provide the networking infrastructure that DEQ will need before the need exists,” Silverman explained. “We’re trying to manage our information technology needs proactively.”

DEQ has considered expanding its wireless network as well, which would be a boon for the Department’s emergency response teams which need to transfer critical data when on location at environmental spills and clean-up projects. The technology would also enable researchers and site inspectors to access GIS applications while in the field. However, DEQ is holding off on wireless access for the moment. “I had planned to roll out wireless to all floors at headquarters and all the regional offices, but have decided to wait until wireless speeds settle down,” said Silverman.

“I fully expect that wireless access will be at 50 Mbps or more by the end of next year,” he continued. In the meantime, DEQ plans to add additional 100 Mbps ports to its switches and replace one switch in the computer room with one that has a higher Gigabit port density.

## Contact Us

For more information, call Enterasys Networks toll free at **1-877-801-7082**, or +1-978-684-1000 and visit us on the Web at **[enterasys.com](http://enterasys.com)**