

**Louisiana GIS CD Version 2 Continuation of
Demonstrations Louisiana Applied and Educational
Oil
Spill Research and Development Program Final
Report**

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Disclaimer

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Abstract

OSRADP has previously funded a series of day long short courses to teach participants how to use the Louisiana GIS CD data with ArcView GIS. Last year we began a series of demonstrations of the CD using application scenarios to reach a larger, more diverse audience. The demonstrations were very successful, and we continued providing them this year while expanding the scope. The demonstrations focused on exhibiting the features of the CD, the user interface, basic operation, a review of critical data layers, and introductory functionality and application scenarios. More time was devoted to utilization of the CD for potential applications. With this approach we achieved the following benefits: controlled pace, no need for computer lab classrooms, larger audiences, more flexibility in venues, better opportunity to target selected groups, no need for roving instructors, shorter presentations, no need for participants to travel or stay overnight, and substantially reduced cost. An effort was made to target the oil and gas industry; oil spill response personnel; environmental, energy and planning professionals; and emergency response professionals. We conducted a series of 14 free, PowerPoint based

demonstrations of the CD to a large variety of audiences in a range of venues. The demonstrations were primarily done using PowerPoint due to time limitations. The demonstrations had a very positive effect, and exposed professionals in over 50 organizations to the applications of the CD and the power of GIS technology.

1.0 Introduction

The Louisiana GIS CD is an innovative digital map of the state funded by the Louisiana Oil Spill Coordinator's Office and co-sponsored by numerous state and federal agencies. The CD is a two volume set and has the following features:

- user interface
- satellite image of Louisiana
- over 40 spatial data layers
- ArcView and GeoMedia GIS programs
- GIS tutorials
- instructions & help features
- metadata and documentation
- satellite tour of Louisiana

One of most important elements of the CD is the distribution of spatial data layers that are the de facto standard in Louisiana. These data are the best available for public distribution and thus will be commonly utilized and shared by public and private agencies. The data have undergone extensive quality control and include Federal Geographic Data Committee (FGDC) compliant metadata.

Numerous other spatial data layers are available that are not included on Version 2 of the CD. However, these data are compatible with the CD and are available on the Internet via the Louisiana Geographic Information Center (LAGIC) at <http://lagic.lsu.edu> and via the On-line Statewide GIS of Louisiana (ATLAS) at <http://atlas.lsu.edu>. These data include one-meter high resolution Digital Orthophoto Quarter Quads (DOQQs) of Louisiana and LIDAR digital elevation data as they become available. In addition, the Louisiana Department of Environmental Quality has released a five meter high resolution satellite fusion of the Indian Remote Sensing satellite (IRS) and Landsat Thematic Mapper (TM) satellite on its website at <http://deq.state.la.us>. An example of downloading selected data layers from the web and adding them to the GIS project supplied with the CD was provided.

The intent of the demonstrations was to focus less on the GIS software and more on the CD's numerous potential applications. Less time was spent on ArcView procedures and more on basic operations, and a review of fundamental data layers, functions, and scenarios. There were several benefits to using this approach: the pace was more controlled, and the concepts were presented more quickly (less than a day of training); there was no need for sophisticated computer lab classrooms; larger audiences were possible; there was more flexibility in the choice of venues; it was possible to go directly to target groups and reach decision makers and managers; there was no need for roving instructors to assist during class time; the contact time was reduced significantly and

varied for each group; more application scenarios could be demonstrated; there was more opportunity for discussion and questions; and the cost was substantially less with a minimal expense to participants. Application scenarios were improved and expanded for this funding cycle to better accommodate the more diverse audience.

2.0 Methods

The demonstrations were tailored for groups in the oil and gas industry that had been under-represented in previous training sessions. We made presentations in relaxed and informal settings, and more importantly, brought the demonstrations to the audience rather than requiring them to take valuable time traveling to a classroom. We were therefore not restricted by computer classroom environments and were able to serve target audiences more directly by providing the demonstrations on site in familiar surroundings.

The outline below identifies the elements of a typical demonstration. These were modified or customized depending on the venue and audience.

Application Scenarios

Oil Spill Scenerio

Part A

Zoom To Selected Place Name To Illustrate Capability To Associate Name With Spatial Location

Identify Features In Vicinity To Illustrate Spatial Link To Database Attributes

Part B

Illustrate Latitude/Longitude Button

Enter Coordinates Of Hypothetical Spill: -90.191179, 29.110632

Notice No Boat In Vicinity

Check Proximity To Spill Location

Pipeline Crossings

Notice Pipeline Crossing Near Spill

Oil Wells

Abandoned Barges

Waste Pits

ID Pipeline Crossing

ID Water Body Of Spill (Major Rivers & Lakes)

Part C

Identify Features In Vicinity Of The Event

Hightide Line To Indicate Tidal Encroachment Potential

Habitat Type: Define From Layout
Facilities - Heliports: Select With 3 Mile Proximity Circle
 Isolate Airports With Query, Select From Set
Oyster Leases
Seabird Colonies
Primary And Local Roads

Part D

Identify Digital Orthophoto Quarter Quad At Spill Location
Add Identified DOQQ, Zoom In
Print View

Toxic Release Scenario

Relocate to Town of Norco and Norco Refinery using Selection Zoom
Show Populated Places in Vicinity

Show:

- Source of Toxic Release Plume
- Plume 1
- Plume 2
- Plume Table

View St. Charles Census Block Group Population Distribution

Select Plume 1

Activate Block Group Population

Select By Theme Using "Have Their Center In"

Select By Theme Using "Intersect"

Show All Selected Block Groups and Streets

Show Block Group Table, Promote

Select Population Field (Persons) and Calculate Statistics to Identify Number of People

Show Street Table, Promote Selected Streets and Identify

Notice Water Intake Valve in Mississippi River Downstream from Toxic Release

Select Community Features in Vicinity of Plume Using Proximity Circle

Identify Schools, Parks, Hospitals in Area

Hurricane Scenerio

Show Historical Hurricanes Over Louisiana and Orleans Parish

Display Download Image of Hurricane in Gulf Approaching Louisiana State University
View Projected Path

Identify Cities in Projected Path and Calculate Population Affected
Identify Possible Evacuation Routes

Flood Zone Scenerio

Show Flood Zones in East Baton Rouge Parish with Census Blocks
Calculate Number of Houses and People in Flood Zone A

Sea Level Rise

Illustrate Effect of 1 Meter Sea Level Rise on Louisiana Coast.

Emergency Routing

Display Graphic of Route From Emergency Dispatch Station to Emergency Call with Printed Directions

Demographics

Illustrate Demographic Variability in Louisiana Parishes Using Color Shading

Transportation

Show Community Features Within 300' Right-of-Way
Identify All Major Highways Within 3 Mile Radius of City
Calculate Length of All Highways in Parish
Identify All Highways Intersecting a Railroad

Address Matching and Geocoding

Find an Address
Identify a Geocoded Address
Illustrate Geocoded Address Over DOQQ

Crime Analysis

Plot Crime Incidents in Neighborhood

Identify and Display Community Facilities and Businesses With Buffer Region of Crimes

Identify and Display Streets and Address Within 500 Foot Buffer of School

Download Additional Data

Indicate Additional Data Available for Download and Note Compatibility with Louisiana GIS CD from <http://lagic.lsu.edu> and <http://atlas.lsu.edu>

3.0 Results

Fourteen demonstrations of the Louisiana GIS CD were conducted at 14 different locations in the following cities: Baton Rouge, New Orleans, Lafayette, Shreveport, Houston, Ruston, Tallulah, Westlake, and Sulphur. Nearly 300 people from over 50 organizations attended the demonstrations, and the response was overwhelmingly favorable. Skeptics quickly became believers after the presentations. In several instances, attendees began using the CD immediately. Several participants told us that they had no idea what a GIS was and were surprised and delighted at what could be accomplished with the materials we presented. Many attendees asked when the CD would be updated, where they could find sources of additional GIS training, and if future demonstrations were planned in their area.

Over the two year period, 27 demonstrations have been conducted, introducing the Louisiana GIS CD to over 700 people representing more than 100 organizations. These demonstrations have brought the Louisiana GIS CD and many of its potential applications to the direct attention of management, supervisors, technicians, and specialists in several federal, state, local, and private organizations. The feedback we have received has provided valuable information that will help us improve subsequent versions of the product. The demonstrations have helped build valuable relationships with groups most likely to use the CD for its intended applications.

4.0 Schedule of Demonstrations and Venues

Table 1.

Group	Audience	Venue	Location	Date	Number	Notes
La. Geography Education Alliance	Secondary School Teachers	LSU CADGIS Lab	Baton Rouge	02-Jun-01	10	
Arctic & Marine Oilspill Technical Seminar	Conference Attendees	Sheraton Grande Hotel	Edmonton, Alberta	12-Jun-01	25	Note 1
Teacher In-	High School	Zachary High	Zachary	03-	0	Note

Service Workshop	Teachers	School		Aug-01		2
La. Office of Emergency Preparedness	Managers	Dept. of Natural Resources Bldg.	Baton Rouge	09-Aug-01	4	
American Society of Civil Engineers	Acadiana Branch Engineers	Petroleum Club of Lafayette	Lafayette	12-Sep-01	20	
Mandalay Oil and Gas, Inc.	Managers, Field Personnel	Corporate Office	Lafayette	04-Oct-01	5	
British Petroleum, Inc.	Deepwater Business Unit	Westlake 1 Office Tower	Houston	06-Nov-01	5	
Louisiana Science Teachers Association	SciTech 2001 Convention	Radisson Hotel	Baton Rouge	30-Nov-01	15	
La. State Police	Trans. & Env. Safety Section	Headquarters Building	Baton Rouge	12-Dec-01	6	
Louisiana Tech University	Professors and students	School of Forestry Auditorium	Ruston	22-Jan-02	26	Note 3
Madison Parish Communications District	Professionals	Madison Parish Court House	Tallulah	26-Feb-02	20	Note 4
Waldemar S. Nelson & Company	Engineers	Corporate Headquarters	New Orleans	07-Mar-02	70	Note 5
American Electric Power Company	Mixed Group	Corporate Office	Shreveport	26-Mar-02	20	Note 6
La. Dept. of Transportation & Development	Employees	Headquarters Building	Baton Rouge	26-Apr-02	50	
Conoco, Inc.	Supervisors, Field Personnel	Refinery	Westlake	14-May-02	12	
CITFGO, Inc.	Supervisors, Field Personnel	Refinery	Sulphur	28-May-02	10	
					298	Total

- 1. This demonstration was technically not part of the funded project for the current year, nor was it delivered by the project PI due to illness. However, Dr. Donald Davis of OSRADP made the demonstration using a PowerPoint presentation developed by the PI, and we think this demonstration should be documented.*
- 2. This workshop was cancelled because no teachers attended, even though over 30 had signed up. We loaded all the computers for training and had prepared a special version of the demonstration for this workshop, but after two hours of waiting for the teachers, the workshop was cancelled. We were also prepared to provide hands-on training requested by Dora Cooper. A follow-up demonstration was not scheduled.*
- 3. Included Attendees from several university departments and from the La. Dept. of Agriculture & Forestry in Natchitoches.*
- 4. Included representatives from Sheriff's Office, District Attorney, State Police, E-911, and Parish Water Works.*
- 5. Included U.S. Corps of Engineers and personnel from other engineering and oil companies.*
- 6. Included local landowners and representatives from the Biomedical Research Foundation, Caddo Parish, N. Shreveport Development Corporation, Shreveport Airport Authority, and Centenary College.*

5.0 Relevance

Version 2.0 of the Louisiana GIS CD provides accessible, high quality, digital spatial data for managers, decision makers, and response and application personnel in state and federal agencies, industry, and local government. The CD-ROM and the accompanying free software, along with the widespread availability of connections to the Internet, facilitate enhanced communication. These resources can also help improve coordination for a wide range of activities, from resource management to emergency planning and response. Demonstrating the CD and its features provided practical examples of how geospatial data and GIS software can be essential to the operation of an agency. Since the CD comes with tutorials, users will be able to acquire skills and develop applications on their own, or sign up for in-depth training from a vendor. These demonstrations illustrate the CD's ease of use and the value of applying the GIS software. As more people become acquainted with ArcView and/or GeoMedia, they will find the CD extremely useful for a wide range of applications.

The relevance of these demonstrations was also enhanced due to recent events in Louisiana that will demand or require the utilization of GIS technology. These include the Coast 2050 Initiative for coastal wetlands, the Governor's Vision 2020 Initiative, the

new focus on homeland security since 9/11/01, and the recent brown marsh phenomenon in the coastal zone.

In addition, recent advances in GIS technology in Louisiana will enhance the spread and utilization of GIS. These include the I-Team's Geospatial Initiative and Louisiana Map that will focus on geospatial framework data layers and an on-line GIS portal; the LSU Center for GeoInformatics that will build a statewide geodetic reference network – the spatial base that framework data are referenced to; the availability of statewide 1-Meter Digital Orthophoto Quarter Quads; the availability of statewide high resolution LIDAR elevation data; and hundreds of geospatial data layers currently available on-line.

It is important for recipients of the CD to become familiar with the spatial data and to become proficient with the software. Very few of our educators or industry personnel have been exposed to either the type of spatial data on this CD-ROM or the techniques needed to use the information. Only a relatively small number of state and local government agencies have a remote sensing or GIS specialist or have trained their personnel in the use of these types of data and techniques. More people in Louisiana need to become familiar with such spatial data sets, not only as they relate to the intent and purpose of this CD-ROM, but also to access the broad range of related techniques and data. These demonstrations have emphasized the use of the CD-ROM, but also clearly illustrate the value of these spatial data for many applications and functions.

6.0 Deliverables

A PowerPoint version of the demonstration was developed using ArcView during the first year of demonstrations. This has proven to be the most effective method for demonstrations. The PowerPoint version faithfully mimics many of the ArcView functions. Improvements were made to the demonstrations during this contract period, and new scenarios were added. The PowerPoint version of the demonstration is provided as a deliverable with this report, along with the conference presentation.

7.0 Problems Encounters

The few problems encountered were minor and related to the usual difficulties in setting up a demonstration in unfamiliar surroundings. The biggest problem was the cancellation of the demonstration planned for the Teacher In-Service Workshop at Zachary High School. No teachers attended, even though over 30 had signed up for the event.