

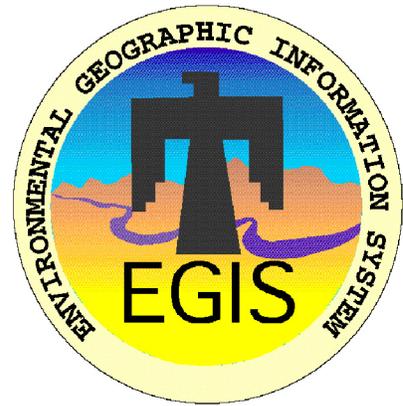


Environmental Geographic Information System (EGIS)

Description

The Environmental Geographic Information System (EGIS) maintains an ARC/INFO™ Geographic Information System (GIS) database that contains more than 2000 cartographic data layers that represent the environmental and physical characteristics of entities within the Kirtland Air Force Base (KAFB) area and within other areas where Sandia National Laboratories (SNL) has responsibility.

The EGIS creates customized maps that portray customer data with respect to topographic and environmental setting, and with respect to such themes as geology, soil types, vegetation, wells, contaminant sources, etc. These maps can be created in one of the EGIS standard map formats or a custom format.



Mission

The EGIS provides environmentally related scientific data support and analysis through the implementation of integrated GIS, Relational Database Management System (RDBMS), and associated analytical software.

Products and Services

Map Products

All maps that are created by EGIS are custom maps. The customer defines that map extent, the scale, and the specific data layers; the GIS analyst then uses this information to create a map that is unique for that customer. Standard map products include both portrait and landscape format in letter, tabloid, and plate sizes; standards are included to meet requirements for Sandia (SAND) document figures. Each map has an identification number that uniquely identifies the map for future reprints or modifications. Maps are stored electronically and can be retrieved at any time; paper copies of maps are not stored. EGIS also produces official Environmental Restoration (ER) Site maps, the ER Site Atlas, and the Geographic Data Atlas. All map products are generated under a Quality Assurance Plan that provides transparency, traceability, reproducibility, and archival support.

Analyses, Contouring, and Statistics

EGIS provides tools and expertise to perform spatial analyses and the contouring of any spatial data including the analytical results of sampling. Available software includes ARC/INFO™, ArcView™, SpatialAnalyst™, MapInfo™, Surfer™, and Grapher™ for performing GIS analysis.



Modeling

EGIS supports many different modeling efforts. The most recent example is for the Arroyo del Coyote Watershed Assessment and Management Project, where GIS was used to model the Modified Universal Soil Loss Equation. Additional modeling efforts include the Environmental Restoration Project Sitewide Groundwater Modeling Project. The GIS created data layers to the MODFLOW model. Converting the model output to map layers allows visualization of the results and develops computer scripts that link GIS data to MODFLOW.

Metadata

The EGIS is in the process of creating metadata for all primary coverages. Metadata are “data about data.” Metadata describe the content, quality, condition, and other characteristics of data. Metadata for selected EGIS coverage are currently available on the EGIS internal web home page.

The EGIS Database

Environmental Restoration Database Management System (ERDMS)

The primary database for the Environmental Restoration Project data, developed in ORACLE™ and residing on a UNIX server, is the ERDMS. It is linked to the EGIS for spatial representation. The data in ERDMS include:

- Analytical Sample Results
- Waste Container data
- Well Completion data
- Groundwater Level data
- Chemical Names
- Analytical Test Methods
- Chain of Custody data

Environmental Restoration Site Tracking (ERST) - Site Tracking data

Site Tracking data include the history, location, size, and extent of each ER site. Site Tracking answers ER site queries from all SNL departments and from SNL regulators. This database is currently being expanded to include a number of smaller site related databases and spreadsheets. Much of the ER Site data is available on the internal web at <http://ertrack/sitelist.cfm>.

Data Access

ArcView™ and Oracle Browser™

The EGIS provides tools and services that allow desktop access to GIS maps and ERDMS data on the Sandia internal network. These tools are ArcView™ to view and map GIS data and Oracle Browser™ to view ERDMS data.

Global Positioning System (GPS)

The EGIS provides a global positioning system (GPS) with differential correction and GPS services to accurately locate samples, waste piles, artifacts, etc., or to navigate to a given location on the ground, i.e., to a possible contaminant source identified by remote sensing. With differential correction, the GPS is accurate to within one meter. Services include uploading the GPS data into the GIS.

Using the EGIS Services

How Can I Order a Map?

Stop by the EGIS area in Building 823, Room 4240, and fill out a GIS work request. The work request should be submitted to Doug Rizor or Denise Bleakly. The work request will be reviewed with you to make certain that we understand your needs. You can also call in your request or email a request to any of the EGIS team members. Please include a project/task number.

How Can I Access ERDMS Data?

Customers on the Sandia Internal Network can use Oracle Browser™ to view data in ERDMS. This viewing tool will also let you download copies of the data to your computer for your use in a spreadsheet or statistics program. To have your computer set to use Oracle Browser™, call Sherry Briscoe at (505) 284-2597.

A hard copy or specialized report can be prepared for you by the ERDMS team. Fill out a GIS work request or call Sherry Briscoe to discuss your needs.

How Can I Get my Data into ERDMS?

Data that goes into ERDMS needs to be verified and correctly formatted. Tina Sanchez is the Data Manager for ERDMS. Call her at (505) 284-2516 and she will assist you in getting your data into the system. We can load analytical sample results directly from the Sample Management Office data repository into ERDMS, but we need to know what data to load.

Why Should I put my Data into ERDMS?

ERDMS is and will be the primary repository for all data that are relevant to the SNL/NM Environmental Restoration Project. Data that are put into ERDMS are backed up and archived on a regular basis. If your data are in ERDMS it can be the basis for future decisions.

How Can I Get GPS Service?

The GPS can help you get coordinates for a sample point or can help you navigate to a known location. We can help you by providing professional GPS specialists to work with you in the field, or we can train you to use the GPS equipment. Accurate location is essential in modern site characterization.

Contact

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Look for more information about the EGIS on the Sandia Intranet Web:

<http://www.irn-sandia.gov/egis/gishome.html>

Or the Sandia National Laboratories External Web Site:

<http://www.sandia.gov/GIS/>