



Spatial Data Availability Energizes Florida's Citizens

**State of Florida
Agency for State Technology
&
Department of Environmental Protection**

Category: ICT Innovations

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Executive Summary

Static maps and aerial imagery are things of the past. Geographic Information Systems (GIS) allows for images to be interactive and provides individuals with a more dynamic approach to the study and investigation of the environment.

Florida's Department of Environmental Protection's (DEP) GIS program incorporates this approach to the entire department by working with each of the department's divisions to provide interactive maps as tools for leveraging geographic information for users to better understand Florida's environment. GIS data and imagery assist each program's mission by allowing users to capture specific data for their needs. DEP's gallery of GIS tools can be accessed via the web, smartphones, and other electronic devices. DEP maintains over four terabytes of imagery, there are over 850 enterprise GIS layers available for spatial analysis with 144 program specific layers shared on the open data portal, and there are over 9,100 visitors that visit the site monthly.

DEP's enterprise GIS is organized to maximize the investment in GIS technology and ensure that GIS is implemented with an enterprise strategy to provide robust environmental decision making tools to DEP staff and stakeholders including the citizens of Florida. To more effectively share data and information, DEP has utilized Esri's ArcGIS Online platform to implement an Interactive Map Gallery and develop a customized Geospatial Open Data Portal, demonstrating the effectiveness of spatial data toward the DEP Secretary's strategic goal to "proactively communicate a clear and consistent message both internally and externally." These resources combine to provide public access to DEP's tremendous library of spatial data in an efficient, straightforward and engaging way.

The Interactive Map Gallery highlights collaborative projects between state and local agencies as well as success stories inspired by DEP's mission statement. Having this content available in a web map gallery simplifies access to geospatial data and builds familiarity with DEP's initiatives and successes.

The recently launched Geospatial Open Data Portal provides search, analytical and distribution tools for DEP's GIS data and related metadata. Also using Esri's ArcGIS Online, this portal was created with in-house resources and was deployed using existing cloud-based infrastructure. This web-based portal provides quality assured, current, DEP spatial data in a searchable index with a variety of download formats.

This successful initiative supports DEP's mission throughout the state and provides spatial data to the public and department staff. When used in tandem, the Interactive Map Gallery and the Geospatial Open Data Portal energize stakeholders to participate with the DEP's programs in support of its mission.

Concept

As Florida's lead agency for environmental management and stewardship, DEP is one of the more diverse agencies in state government - protecting our air, water and land. The vision of DEP is to create strong community partnerships, safeguard Florida's natural resources, and enhance its ecosystems. Toward that mission, DEP focuses on providing data and information to both Florida citizens and agency employees, to inform and empower in ways that positively impact the environment both directly and indirectly.

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DEP took full advantage of the Esri developer tools and in less than a year, deployed the Interactive Map Gallery to highlight collaborative projects between state and local agencies as well as to highlight success stories inspired by DEP's mission statement. Story Maps and Map Journals provide a robust inventory of DEP's spatial data to engage a myriad of stakeholders. Having this content available in a web map gallery simplifies access to geospatial data and builds familiarity with DEP's initiatives and successes.

The recently launched Geospatial Open Data Portal provides search, analytical and distribution tools for DEP's GIS data and related metadata. DEP's Esri ArcGIS Online organizational account was deployed using existing cloud-based infrastructure and provides quality assured, current, DEP spatial data in a searchable index with a variety of download formats. A graphic interface allows users to explore these data by mapping their extent, reviewing attribution, and using charting and statistics tools to query the data before downloading it locally. Analytics allow GIS staff to monitor the site activity and staff can re-allocate time previously dedicated to answering data requests. The geospatial open data portal is also an innovative way to provide access, search capabilities, graphing visualization, metadata review, and download options to interested citizens looking for spatial data.

The portal provides a variety of data layers and views in 14 different categories, including:

Administrative Boundaries	Land Cover
Atmosphere & Climate	Land Ownership
Biology & Ecology	Oceans & Estuaries
Buildings & Structures	Planning & Development
Business & Economics	Recreation & Tourism
Environmental Monitoring	Utilities & Communication
Geology & Geophysics	Water Resources

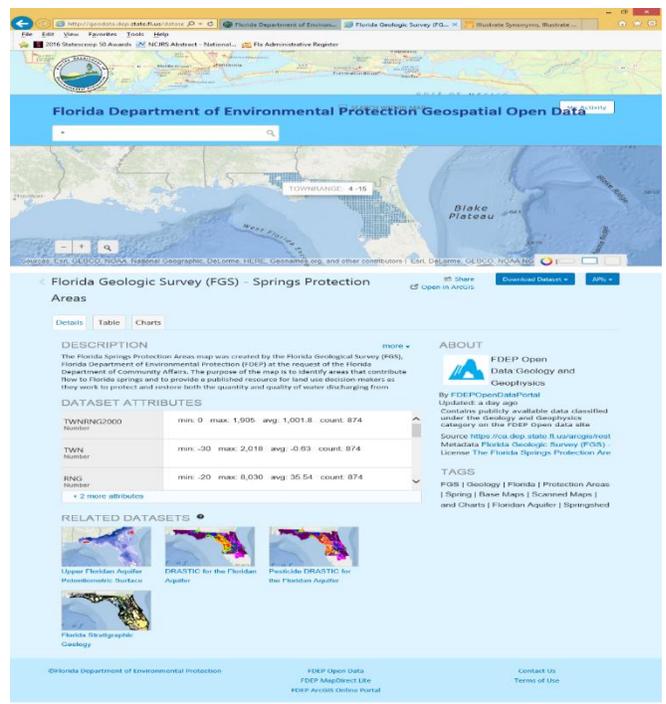
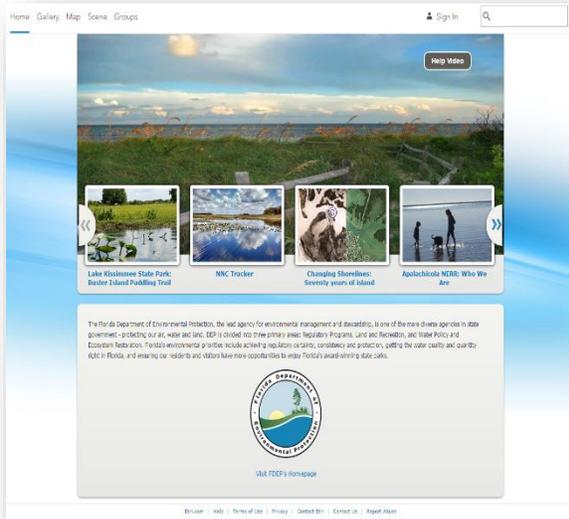
DEP hosts the largest library of GIS program data in the state and its approach to sharing these data serves as a model to other agencies and data providers. The GIS website receives over 9,100 visitors each month and DEP anticipates increased usage. By providing direct access to the DEP’s success stories and quality assured spatial data via these GIS platforms, university students, the business community, environmental organizations and all of Florida’s citizens are empowered.

Because DEP already had an ArcGIS Online organizational account in place to support GIS services, it made sense to leverage the Esri template for open data portals. This tool allowed DEP to quickly implement data sharing for a low cost in terms of project resources and staff time. DEP’s existing GIS infrastructure was leveraged to support these new tools. Over the course of six months, DEP’s GIS staff designed the portal and populated it with DEP’s spatial data. Internal and external testing was conducted and enhancements were made to better meet user needs and improve the user experience. The portal was designed to require no user training and the intuitive interface supports the spatial data sharing.

The successful development and deployment of the portal has gained attention from other state agencies and the state’s water management districts who are designing their portals to mirror DEPs, in hopes of providing a seamless user experience for the state’s citizens.

In-house staff was used for development, and this expertise also provides additional benefit in continued expansion and enhancement as the demand for additional interactive mapping projects increases. Other than training, no consulting or technical funding was required.

Screenshots of the Interactive Map Gallery, Geospatial Open Data Portal and a sample “view” of the Springs Protection Areas data are provided below to illustrate the streamlined and intuitive experience provided to citizens, while at the same time attempting to represent the depth and breadth of the data being provided.



Significance

This successful initiative supports DEP's mission throughout the state and provides spatial data to the public. Benefits from enterprise GIS access are measured in staff efficiency, consistency in decision making, improved documentation and data sharing as well as through the improved technical outcomes that result from staff's access to quality spatial data for environmental decision-making. When used in tandem, the Interactive Map Gallery and the Geospatial Open Data Portal energize stakeholders to participate with DEP's programs in support of its mission. These portals share the most recent version of DEP's spatial data, organized into categories based on International Standards for Organization (ISO) that facilitates data accessibility. No GIS experience is required to interact or benefit from these tools.

Story Maps communicate DEP's success stories and often highlight the partnerships that made those projects successful. These Story Maps can link to small businesses such as canoe outfitters or highlight marinas and hotels in the Green Lodgings program. Some of the most visited content in the gallery focuses on Deep Water Horizon recovery projects. These efforts further DEP's goal of partnering with communities and businesses to protect natural resources and promote economic growth. In a continuing effort to focus taxpayer resources on projects that provide a direct benefit to the environment and local communities, interactive maps allow stakeholders to record information about restoration projects, grants and cost shares that impact their local communities. The resulting GIS spatial data, accessed from the geospatial open data portal, allow place-based analysis.

In an effort to improve the quality of natural resources through long-term planning, restoration and maintenance, the new Open Data Portal provides authoritative, quality assured DEP spatial data to university students, consultants, local governments and any member of the public interested in obtaining DEP data in multiple, user friendly formats via a web browser. Programs that rely on water quality modelling, basin restoration and brownfield mitigation all depend on GIS data and spatial analysis to understand these complex systems. Leveraging the GIS tools allows stakeholders to make the most informed decisions on these important issues using the most current and authoritative data. Finally, these GIS tools in tandem empower employees to solve problems through innovation and efficiency.

Impact

DEP's Interactive Map Gallery receives an average of over 9,100 views per month. By giving citizens the ability to access interactive data-driven maps through an intuitive portal, DEP has strengthened data sharing efforts and promoted transparency. In addition to the spatial data and related metadata, when GIS information is downloaded from the geospatial open data

portal, attribute links are maintained. This means that the attributes in layers like Environmental Resource Permits, that contain links to in-house document storage applications, allow users to link to other DEP enterprise information portals. This streamlines the citizen's ability to get information about related events, permits, or projects in one place, saving time and frustration. Providing this kind of access to the user also saves DEP staff time in answering data requests and making internal inquiries about data across program areas. Additionally, statistics are collected and shared on the use of the interactive maps and geospatial open data portal tools, which allows programs to gauge the success of their work.

Staff have begun to share the web address of the portal and the interactive map gallery in their e-mail signature lines and on business cards, to better publicize these resources. Not only are existing data users reporting their support of the new tools, but DEP is hearing from citizens that had never before accessed the data and are enthusiastic to be able to interact with it for their own initiatives.

DEP's achievements in using and sharing GIS data serve as a model to other agencies and data providers.

Reference links:

<http://fdep.maps.arcgis.com/home/>

<http://Geodata.dep.state.fl.us>