

Building Spatial Search Capabilities for the Omaha District Geospatial Data Catalog

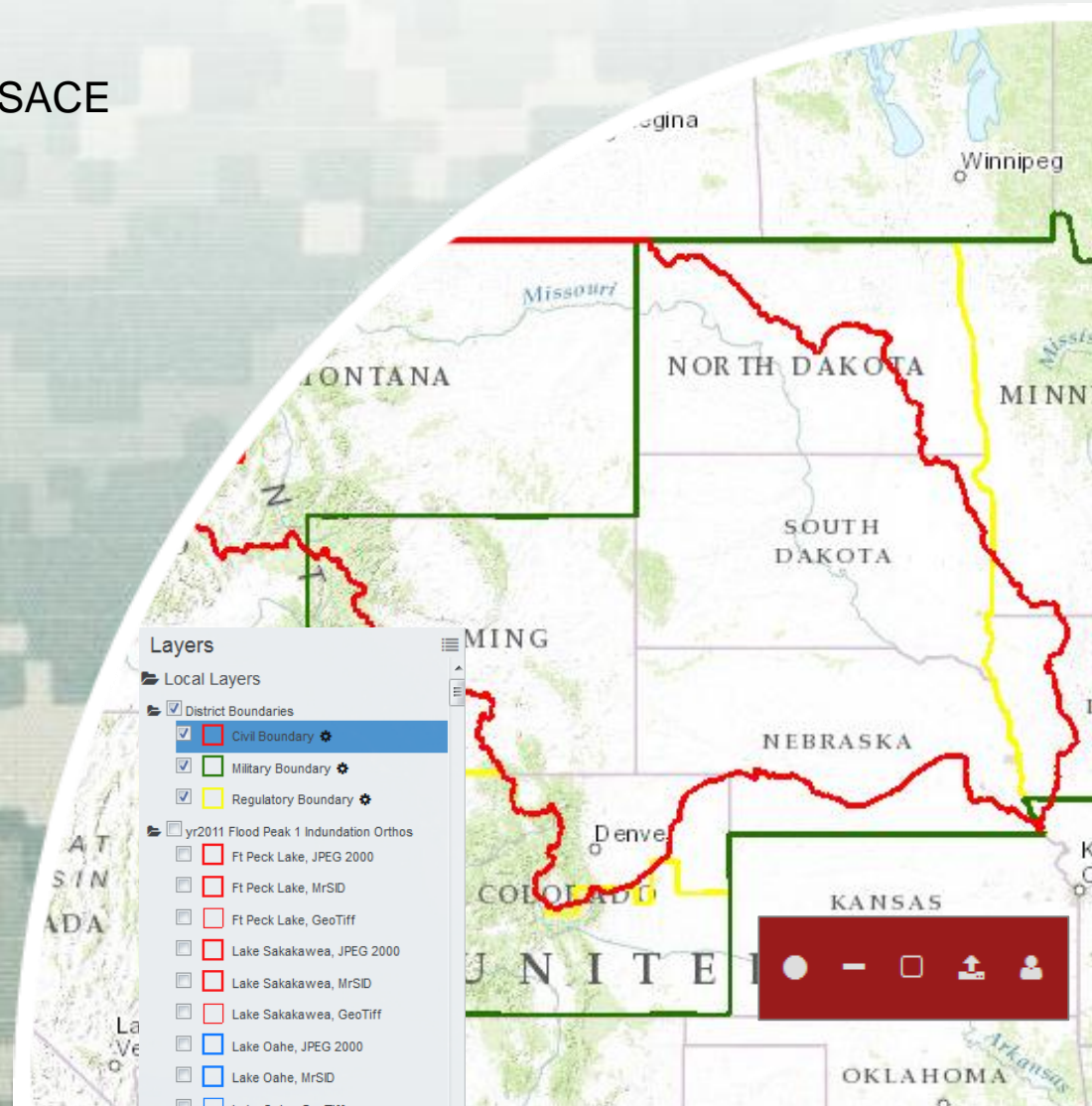
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US Army Corps of Engineers
BUILDING STRONG



Introduction

- ❑ The GIS Service Center (GSC) provides geographic enterprise resources and solutions within the Omaha District to assist with the U.S. Army Corps of Engineers' missions and objectives.
- ❑ The GSC provides software, technical support, and data development activities to approximately 300 active desktop GIS users throughout the entire Omaha District.
- ❑ GIS missions vary greatly across all district personnel. The GSC supports users in Engineering, Hydrology, Cultural Resources, Natural Resources, Planning, and Economics.



Introduction (cont.)

- ❑ The Omaha District Geospatial Data Catalog provides an interactive, web-based GIS data catalog used to search approximately 30TB of data housed by the US Army Corps of Engineers (USACE) Omaha District's GIS Service Center (GSC).

- ❑ Examples of data types returned through the search:
 - Breaklines
 - Contours
 - Digital Elevation Models (DEMs)
 - Digital Terrain Models (DTMs)
 - Hydro Surveys
 - Land Use Datasets
 - LiDAR
 - Orthophotography



Introduction (cont.)

- It also serves as a communication tool between project managers, supervisors, GIS users, and the GSC.
 - Auto-populated e-mails facilitate communication about search results.
 - Project manager contact information readily available.

- It is so much more than a simple data search!



Why create spatial search tools for the Omaha District Geospatial Data Catalog (NWO-GDC)?

- ❑ Supervisors, project managers, and non-GIS users do not want to learn ArcGIS just to search for available data.
- ❑ Current process can be cumbersome for both GIS users and GSC staff.
- ❑ Keyword database search does not necessarily guarantee project area coverage for returned datasets.
- ❑ A more efficient data search, in turn makes GSC staff members more efficient!



Reviewing other GIS Data Catalogs

- ❑ Reviewed 10 state and federal GIS catalogs and data clearinghouses.
- ❑ Predominant methods of spatial search in all map-based catalogs were a rectangular bounding box or user defined point.
- ❑ Most robust functionality was found in the USGS's EarthExplorer tool (U.S. Geological Survey [USGS], 2014).
- ❑ The NWO-GDC incorporated all types of searches found during the review, but tailored them to the Omaha District's needs.



Technical Specifications

The NWO-GDC utilizes existing GSC infrastructure:

- ❑ Oracle Application Express (APEX) front end
 - Utilizes APEX's JavaScript API and custom PL/SQL functions.

- ❑ GSC's NWO Web Map Interface
 - ArcGIS API for JavaScript
 - ArcGIS for Server 10.1
 - ESRI's Spatial Data Engine technology
 - Oracle 11g Database
 - Node.js
 - Apache CouchDB



Future Enhancements

The GIS Service Center plans to continue growing the NWO-GDC in the future. Enhancements include:

- ❑ Integration into other applications that also use the NWO Web Map interface.
- ❑ Providing links directly from the GSC Data Inventory table.
- ❑ Server-side download capabilities.
- ❑ Public access to search capabilities.
- ❑ Other enhancements as desired by users and the NWO Geospatial Committee.



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Cool! This is going to be extremely valuable and useful. I am digging it. Good work.

- Jeff Cowman, Geographer, USACE Omaha District



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