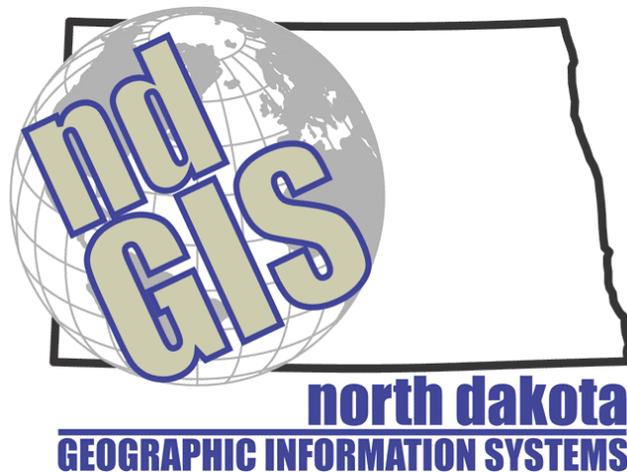


**North Dakota GIS Program Report
To Governor Jack Dalrymple**

July 1, 2015 – June 30, 2016



Executive Order 2001-06: “The committee shall issue a report to the Governor's office at the end of each fiscal year, detailing progress, and problems encountered with GIS development in the state.”

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Executive Summary

The North Dakota Geographic Information System (GIS) Program continued to be successful during the July 1, 2015 – June 30, 2016 reporting period. The Information Technology Department (ITD) and the North Dakota GIS Technical Committee (GISTC) operate the GIS Hub, an infrastructure comprised of geospatial data storage, data services, and application interfaces. The GIS Hub supports state agencies in the development of their GIS and the dissemination of common interest data to other levels of government and the public.

The GISTC actively enhances the GIS Hub by adding new data and maintaining existing data. The GIS Hub also supports web-based applications that are available via a PC or a mobile device.

Looking to the future, challenges include sufficient funding and the need for development of maintained property parcel and city boundary datasets.

GIS Program Governance

The GIS Technical Committee (GISTC) was established by Executive Order 1995-05 and re-affirmed by 2001-06. The primary role of the GISTC is to service the GIS Hub and provide a collaborative environment that supports state agencies' GIS. A secondary role is to coordinate among federal, state, tribal, local government and the private sector.

Seven agencies listed in the Executive Order:

- Department of Health
- Department of Transportation
- Game & Fish Department
- Geological Survey
- Information Technology Department
- Parks & Recreation Department
- State Water Commission

Associate Members:

- Department of Trust Lands
- Oil & Gas Division
- Public Service Commission
- Department of Emergency Services
- Department of Agriculture
- ND Army National Guard

Accomplishments

Data Services and Applications

GIS Hub data are streamed via the web, making these data available to users inside and outside of state government. These data services can be used by people using GIS on a PC or mobile device.

An example of making data available via the web is the Department of Corrections Correctional Facilities Map (Figure 1). Making this data freely and easily available is useful for planning purposes and for communicating which counties operate their own correctional facility and which are served by multiple-county facilities.

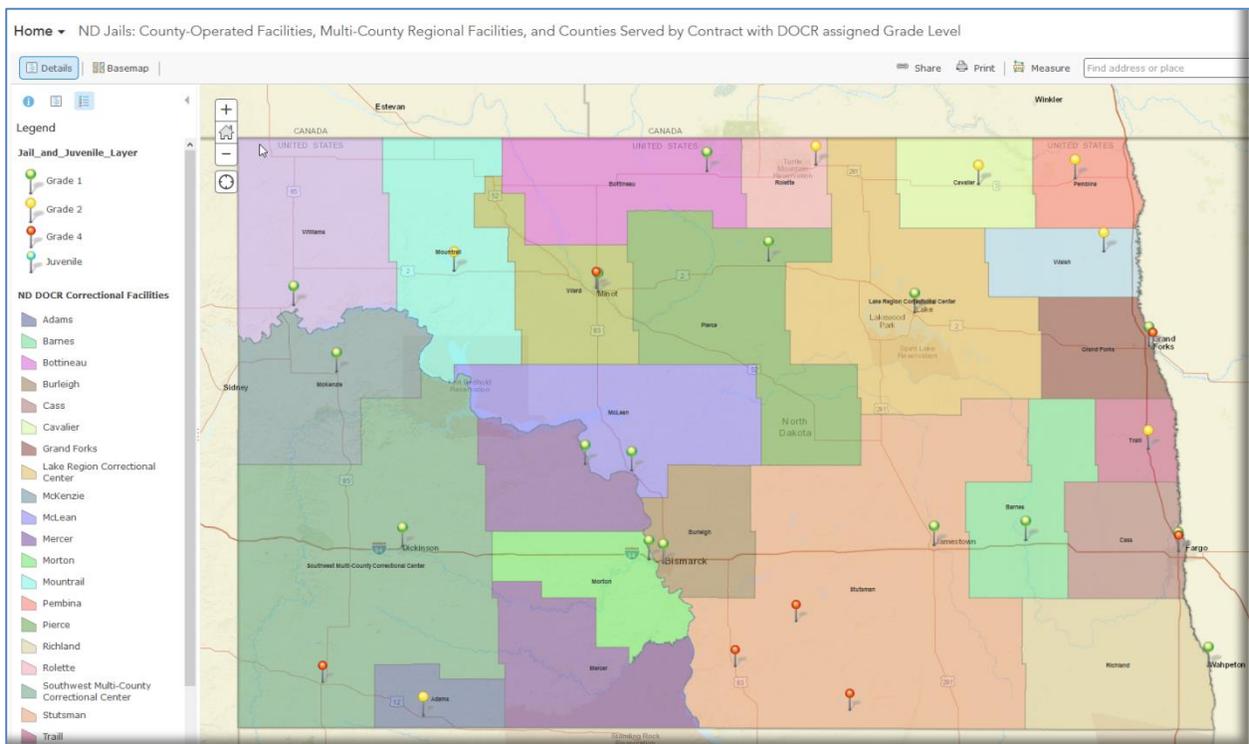


Figure 1. Department of Corrections: Correctional Facilities

An example of a GIS application is the Department of Health Surface Water Quality application (Figure 2). This tool allows one to search and view sampling results for lakes, reservoirs, rivers, and streams.

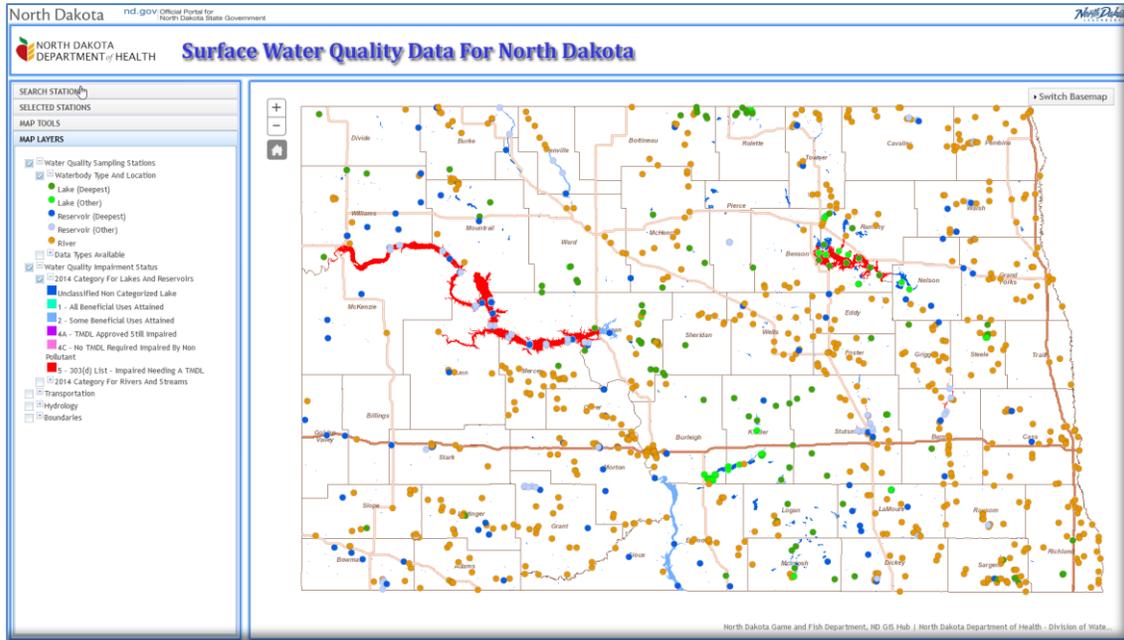


Figure 2. Department of Health Surface: Water Quality

With the Game and Fish Department’s Fishing Waters Map (Figure 3) people can access fishery status and directions.

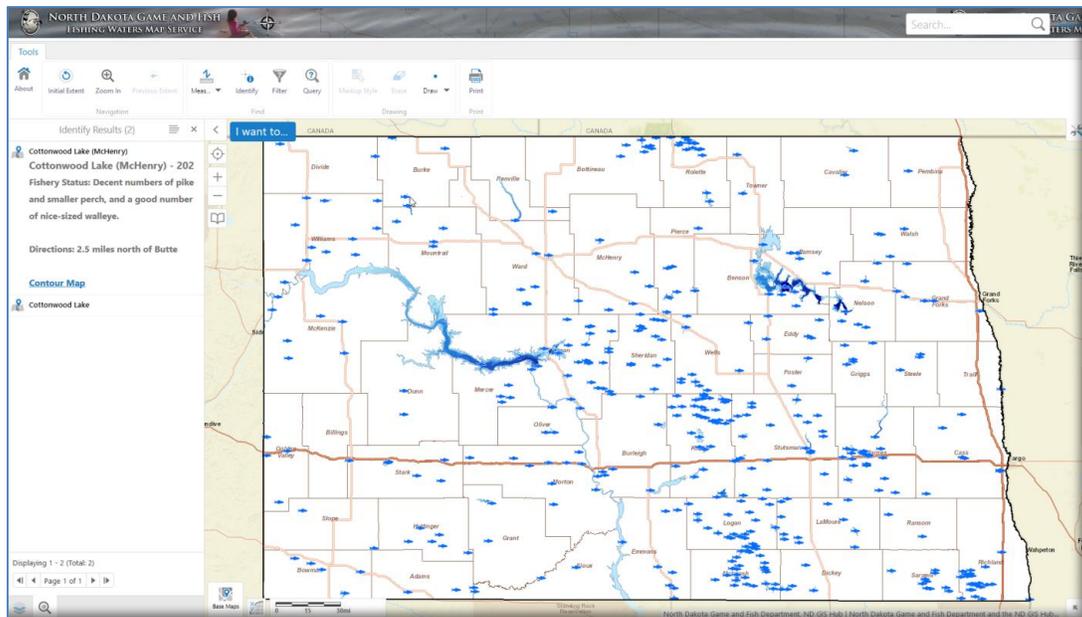


Figure 3. Fish and Game Department: Fishing Waters

Updated Data

- Over the past year, several data sets have been updated or added by state agency data stewards. These data include:
 - State/federal lands
 - City boundaries
 - Earthquakes
 - State/federal roads
 - Mile markers
 - Railroads
 - Time zone boundary
 - Ambulance service locations
 - Wind turbines locations
 - Aerial photography:
 - City of Fargo
 - Ward County
 - City of Minot
 - City of Grand Forks
 - Williams County
 - Statewide 1957-1962

Training and Education

- **Workshops** – The GISTC helps to organize webinars and workshops. Recent examples include introductions to the new release of GIS desktop software, unmanned aircraft systems, and an update on cloud-based GIS software.
- **Coordinated GIS training** – Conscience of the budget shortfalls, the GISTC continues to organize coordinated training as needed to cover a wide variety of GIS subjects. This coordinated training has saved state agencies over \$94,000 in training costs alone and nearly an estimated \$432,000 in combined training and travel costs since the beginning of this program in 2002. Over \$7500 has been saved over the past year alone.

Other Activities

- **City Boundary Accuracy Improvement** – In support of the state’s Next Generation 9-1-1 (NG9-1-1) program in which GIS plays a critical role, the GISTC is assisting with GIS data currency and workflow. City boundaries are particularly important because they are used by NG9-1-1, the U.S. Census Bureau and the Tax Department. Current work involves making sure that the State and the Census Bureau have the same accurate data. This is not always the case as shown in Figure 4. Inaccurate data financially impacts a city in a number of ways, including their portion of the state’s distribution of state sales tax.

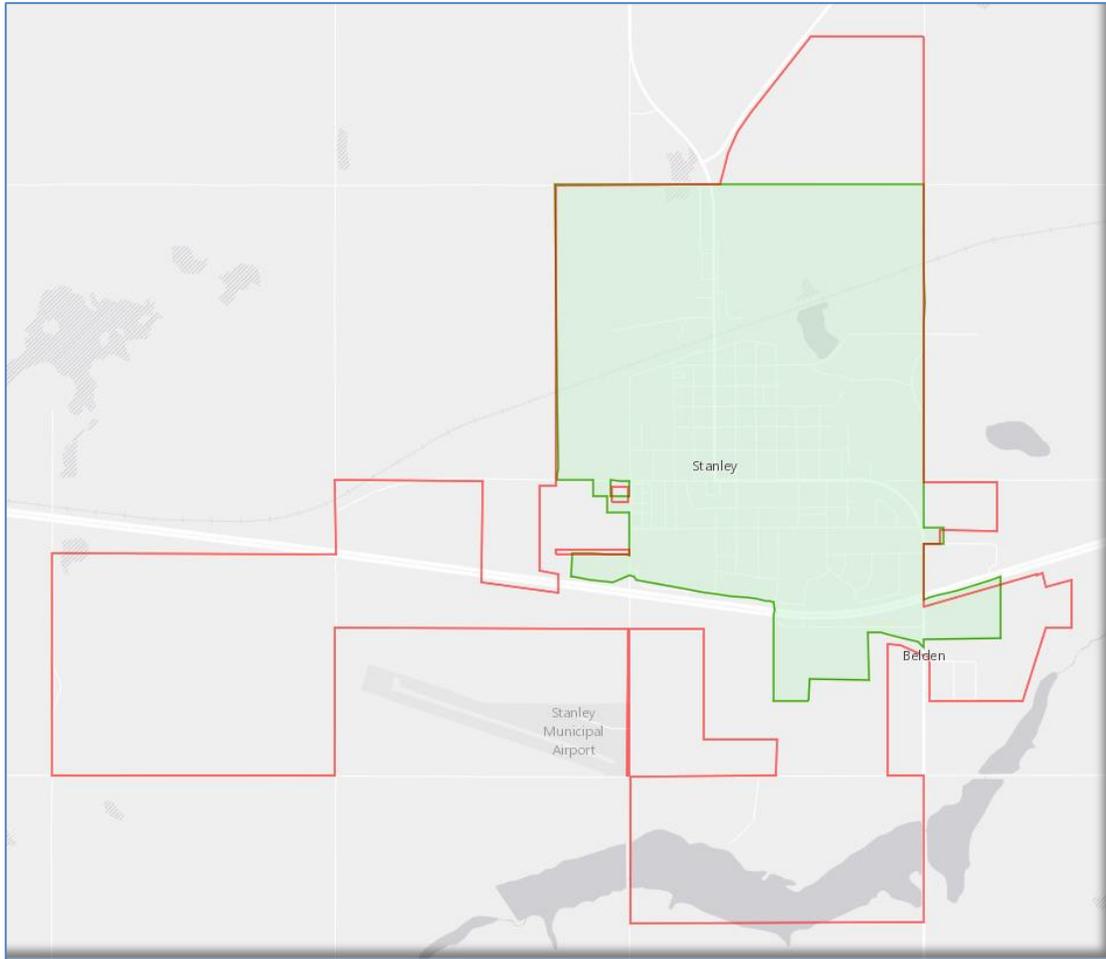


Figure 4. Discrepancies of city boundaries, green shows what the U.S. Census Bureau has on record and red shows what the State has on record.

- Open Data** – Even though the GIS Hub has been publicly delivering data for over a decade, there is a national movement to make government data, both GIS and non-GIS, more “open” in terms of accessing it by a wider range of users and applications. The GIS Hub has the early stages of an open data portal (Figure 5).

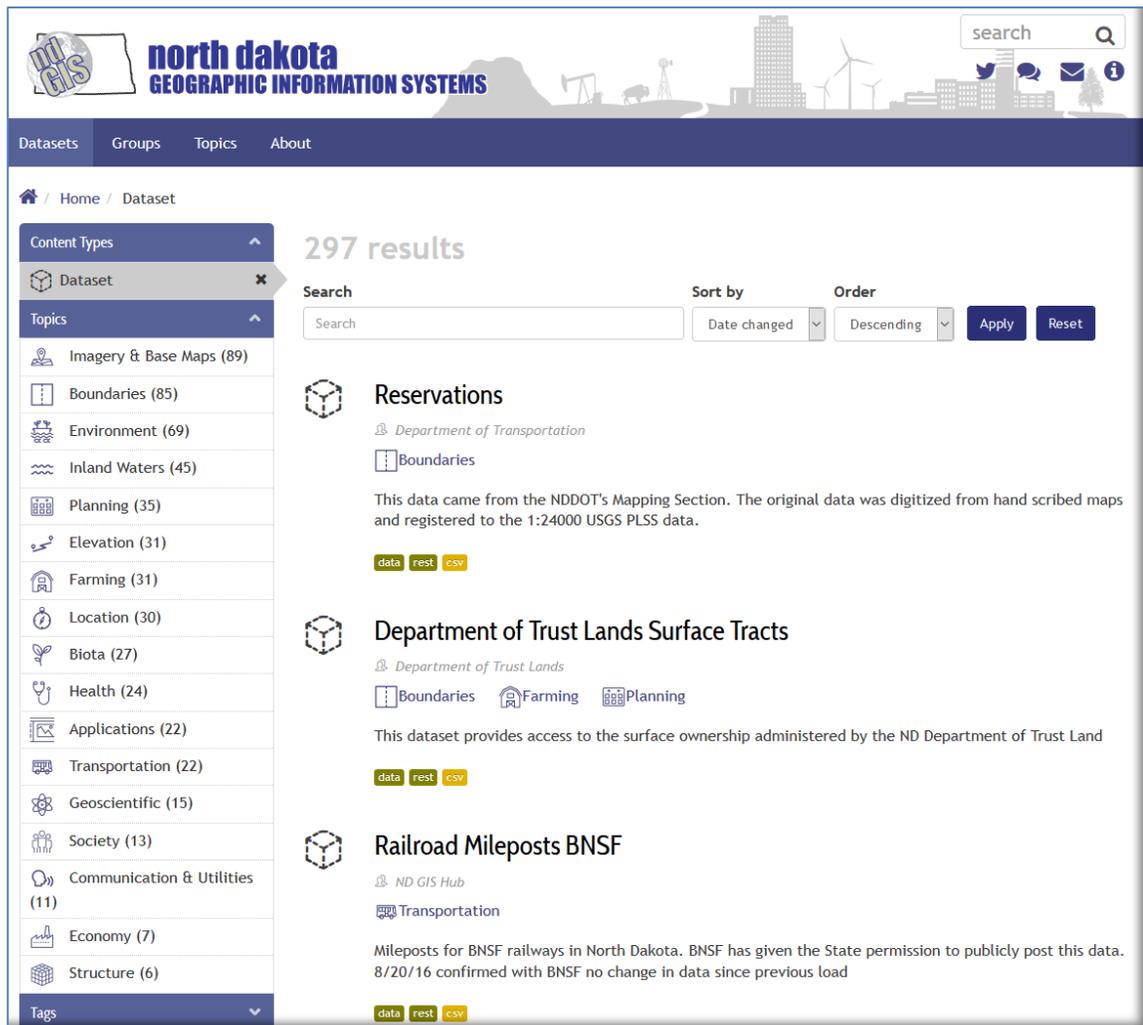


Figure 5. Example of GIS Hub data in the open data portal.

- **GIS Website** – The GIS website (Figure 6) has been updated and is utilizing the Information Technology Department’s Drupal website software. This approach has saved substantial cost in developing the site and in maintaining it.

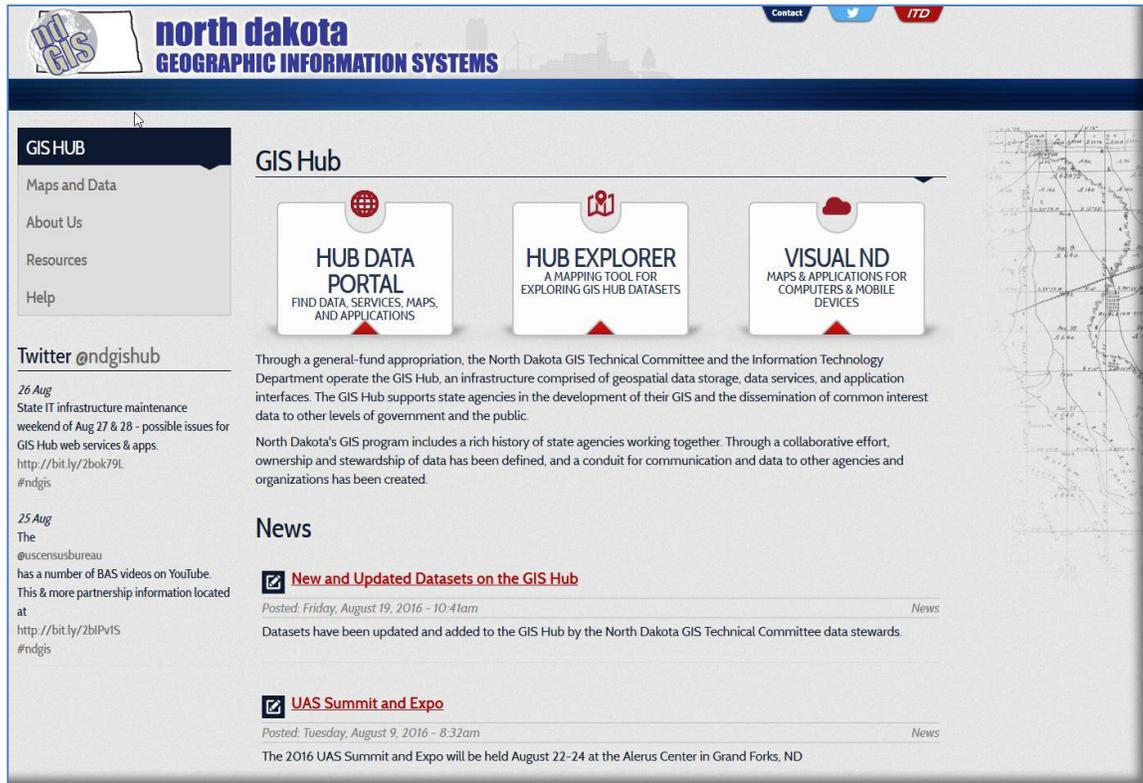


Figure 6. GIS website

Challenges

- **Budget** – The GIS Hub would benefit from having another person dedicated to focusing on data maintenance and system upgrades. Without that person that work comes at the expense of coordinating with agencies and with local government. Reduced coordination can result in duplicated efforts, increased expenses and missed opportunities.
- **Property Parcels** – The GISTC agrees that a statewide parcel dataset would be a valuable asset for the state. Not having a statewide dataset available from the GIS Hub forces state agencies and others who need that data to contact the individual counties, adding to the existing county workload.
- **City Boundaries** – The boundary location of all North Dakota cities needs to be accurate and consistent at both the state and at the U.S. Census Bureau. Without this accuracy and consistency, it is possible that first responders will not be accurately dispatched once the state has implemented NG9-1-1 and because the census housing counts are incorrect, the cities will not receive an accurate state distribution of state sales tax.