FINAL REPORT: Advancing the Spatial Data Infrastructure of Bannock County, Idaho 2020-2023

Per the statement of work (SOW) this brief end-of-year report is being provided to describe the project, the methodologies and technologies used to complete the project, and the tasks and milestones completed throughout the project. Much of this report will focus on progress made in 2023 as details regarding previous year's projects have already been provided in a similar report.

As this project is closing at the end of the calendar year, 2023, this report also provides a more general overview of the entire four-year project.

Description of the Project

The Bannock Spatial Data Infrastructure (SDI) project was designed to leverage the capabilities of Idaho State University's GIS Training and Research Center (GIS TReC) to enhance the SDI of partners at Bannock Transportation Planning Organization (BTPO) and the cities of Pocatello and Chubbuck, Idaho. In turn, these enhancements are anticipated to aid in the decision processes within each partner organization.

The focus of the project has been on pedestrian and public transportation spatial data infrastructure. Specifically, sidewalks and transit stops (i.e., bus stops). A key component of this project has been the summer field data collection where new sidewalks were added to the existing geodatabase and sidewalk curb ramps were evaluated for Americans with Disabilities Act (ADA) compliance.

Methodologies and Technologies

The Principal Investigator (PI, Keith Weber) and student GIS Technician (Danielle Huerta) used Esri's ArcGIS Pro and ArcGIS Online (AGOL) to complete this project. AGOL was used as a platform to support field data collection and sharing spatial data with partners through the formalized Partnered Collaboration created earlier in this project. The Partnered Collaboration will remain in place after the close of this project to allow project partners to easily access the data within the AGOL cloud environment and to continue using the Field Maps collection app.

Walkability was calculated for the cities of Pocatello and Chubbuck following the methodology used by the EPA and its National Walkability Index (NWI). Details regarding the methodology and results are provided in the walkability index technical report[1]. This evaluation used current spatial data including 2020 Census results, transit stops, and comprehensive roads and structures data updated by the Bannock SDI team. The results generally agreed with those reported by the EPA but tended to be slightly higher. This difference was attributed to the omission of transit stop data in the most current NWI assessment (these data were apparently not available to the EPA, but are part of the assessment). It is also noted, that a general error in logic exists in the NWI methodology as an assumption is made that all roads (a common and easily accessible spatial data layer) are bounded by sidewalks. That is not truly the case in reality and an improved model should use an actual sidewalks layer instead of using roads as a surrogate for sidewalks).

To complete the curb ramp update study, we followed the same protocol developed in the spring of 2021. During the summer of 2023 Danielle Huerta used the Field Maps for ArcGIS smartphone app and a Trimble R1 GNSS receiver to evaluate and update the ADA status of 1,215 curb ramps in Pocatello and Chubbuck. A report detailing the results of this particular part of the study is available from the project webpage referenced below.

[1] Cf. https://giscenter.isu.edu/pdf/PDF_BannockSDI/TechReport_WalkabilityIndex.pdf

Following the summer field season, a copy of all data collected or updated was downloaded from AGOL and used to produce the project geodatabase for 2023. This geodatabase is available for download by visiting https://giscenter.isu.edu/research/Techpg/BannockGIS/results.htm

Data References and Links

Project web page:
https://giscenter.isu.edu/research/Techpg/BannockGIS/index.htm
Geospatial data:
https://giscenter.isu.edu/research/Techpg/BannockGIS/results.htm
Reports:
https://giscenter.isu.edu/pdf/PDF_BannockSDI/
AGOL group:
https://isu.maps.arcgis.com/home/group.html?id=f4e64c29925b4c218f4adc5c9d8782a0#overview
Field collection web map:
https://isu.maps.arcgis.com/home/item.html?id=051e3749b82c447da20382774842b317
Tutorial for network dataset creation and use
https://pro.arcgis.com/en/pro-app/latest/help/analysis/networks/create-and-use-a-network-dataset-with-public-transit-data.htm

Tasks and Milestones

- In total, 4,940 ramp points have been mapped with 87% (4,306) assessed for ADA compliance throughout this project.
- A walkability study was completed and compared with results from the EPA's National Walkability Index.
- A sidewalk layer was created and updated throughout this project. In addition, a network dataset was created from these data (and painted crosswalk designations).
- A bus stop service areas evaluation study was completed in 2022 providing demographic and statistical information describing residents of Pocatello and Chubbuck living inside the transit stop Service Area (ISA) as well as those living outside the service area (OSA). Community Analyst summary reports are available at https://giscenter.isu.edu/pdf/PDF_BannockSDI/

Conclusions

The Bannock SDI project was successful and provides our partners with geospatial data and analytical results to help support well informed management decisions for the communities within the BTPO planning area. This project also supported one student at Idaho State University, Danielle Huerta, allowing her to gain practical experience in geographic information systems (GIS) thus better preparing her for a career in this field. Idaho State University's GIS TReC thanks you for your support and we look forward to working with you again in the future.