

Establishing a Community Network of Open-Source GIS Data Users

Project Category: Lifelong Learning

Project Overview

Portland State University (PSU) is requesting \$100,000 from IMLS to pilot the development of a collaborative Science, Technology, Engineering, Arts, and Math through Geographic Information Systems (STEAM-GIS) program with community libraries, data providers, and K-12 audiences. Following the ‘Civic Switchboard’ project model (recently funded by IMLS), we will develop partnerships between libraries and local data intermediaries to better serve data users, democratize data and support equitable access to information. The primary question we are asking with this effort is: *How can a local university help to incorporate important GIS resources into community libraries and serve as a hub for these libraries long-term?* In an attempt to answer this question, we will facilitate the sharing of expertise and data in order to construct knowledge at the community-level. The anticipated result of this project is a network of Portland metropolitan community libraries, open-source data providers and interested learners (e.g., local teachers, public library users, community activist groups, neighborhood associations, after-school program providers) working with PSU’s Center for Geography Education in Oregon (C-GEO) -- with a mission toward improving and sustaining geography education in Oregon and Northwest Open Data Exchange (NODE) -- a cloud-based, locally administered open data portal based on the open source Comprehensive Knowledge Archive Network (CKAN) platform (ckan.org). NODE’s architecture provides space for community-centered organizations within the data management system, opening the way for libraries to fill the role of neighborhood data curators in partnership with PSU. Data of all types can be uploaded to the portal, and in many cases, NODE will make the data immediately available to the world in the form of interactive tables, graphs, or maps. Participating PSU faculty will serve as STEAM-related experts and guides to help target audiences access and assess open GIS-data resources. GIS, such as ESRI’s ArcGIS suite or the open source alternative, Quantum GIS (QGIS), provide tools with which to engage a wide variety of learners in STEAM-focused data analysis and mapping (ESRI, 2012). By offering series of workshops, we will establish a community network of open-source GIS data users. In addition to this network, the end product of this planning grant funding is the creation of a toolkit and a model for other libraries that are interested in beginning or expanding their role around serving their community as a data information resource.

Project Design

This initiative aims to address the problem of community isolation by providing relevant demographic and geographical resources for our local communities. By bringing academic resources to the communities, we provide them with the power of academia (e.g., partnerships, resources, computing power, expertise, etc.). The goals of this project are three-fold:

1. to provide GIS resources and training to both libraries and data intermediary organizations, thereby filling the need for public access to GIS technology;
2. to develop a network of sharing – in both directions (e.g., data will be generated and shared with libraries by PSU and at the community level, libraries will serve as the central repository for their community); and
3. to establish a proof of concept.

Over the course of one year, we will offer collaborative trainings to address such issues as open data literacy and management for libraries. By offering GIS workshops to self-selected participants (in Multnomah and Clark counties), the project team hopes to promote public access to and awareness of GIS technology. In doing so, this project would support the Library Services and Technology Act’s goal, of “*promot[ing] literacy, education, and lifelong learning and to enhance and expand the services and resources provided by libraries, including those services and resources relating to workforce development, 21st century skills, and digital literacy skills*” (IMLS, 2018).

Statement of National Need and Impact

Making connections with community libraries is at the center of this project, as they serve as a key driver for addressing the information needs and interests of the local community's that they serve. In a 2017 interview with Eva Calcagno, the Director of Washington County Cooperative Library Services, she explained that *"the role of the public library in the community has really changed over the last few decades, as technology has changed both what we do and how we do it, and our communities have changed, we're not warehouses of books so much as we are a place for people to gather and investigate, learn, [and] experiment."*

Currently, users interested in GIS have very limited resources with which they can experiment. For the general public, access to GIS software, data, and technical support is very difficult. GIS resources are typically found in the workplace or at universities, where potential users unaffiliated with these entities are often unwelcome. At the same time, open data efforts are overwhelmingly focused on "supply side" data provision, the one-way flow of data from government sources to end-users (Ohemeng et al., 2015). Researchers have noted the tendency of government open data initiatives to set lofty goals regarding the intended use for the data they provide, but the results rarely meet the desired benchmarks. According to Evans et al. (2013, p. 172), *"This data-driven focus has not been proven to significantly increase citizen understanding of the complexities of issues and policies or their participation in relevant policy deliberations. If the primary goal of open government is to engage citizens, then current initiatives must be re-evaluated and new approaches explored—shifting beyond data delivery. Releasing volumes of data on a Web site without background on why and how it is collected, how it is organized, and its intended use, leaves citizens with herculean tasks of determining its relevance and reliability."*

Figure 1 envisions the resulting open data ecosystem, one in which local libraries are central to the success of the project. Local library branches and digital librarians bring a place-based community knowledge and trust that few "higher"-level institutions can claim. Libraries already function as effective community gathering spaces, youth activity organizers, and digital access gateways for their neighborhoods, making them the optimal locations for bringing together students and other citizens to learn how to access, analyze, and contribute to the body of open data in our region.

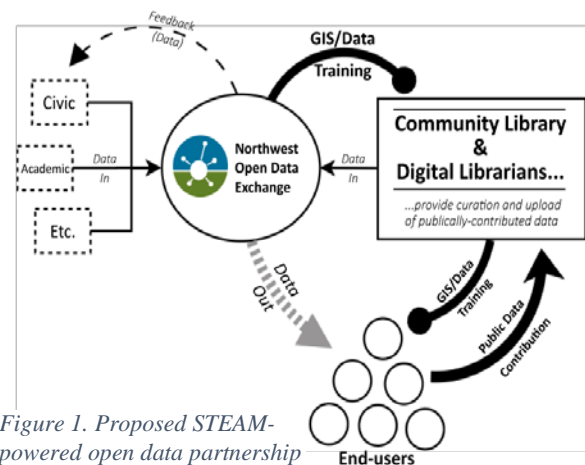


Figure 1. Proposed STEAM-powered open data partnership

Budget

The project budget of \$100,000 breaks down as follows: \$68,818 direct costs, comprised of: \$56,811 for a Project Manager (PI) and Project Coordinator, inclusive of salary and fringe benefits; \$7,336 for a graduate student (incl. tuition); \$2,170K for supplies and workshop hosting; \$2,500 for travel to present at the ALA conference; and \$31,182 indirect costs at 48.5%.

References

Ohemeng, F.L.K. and Ofosu-Adarkwa, K. (2015). One-way traffic: The open data initiative project and the need for an effective demand side initiative in Ghana. *Government Information Quarterly* (32:4, 419-28).

Evans, A. M. and Campos, A. (2013). Open Government Initiatives: Challenges of Citizen Participation. *J. Pol. Anal. Manage.* 32, 172-185.

ESRI (2012). *Advancing STEM Education with GIS*. URL: <http://www.esri.com/library/ebooks/advancing-stem-education-with-gis.pdf>. Last accessed: 4 September 2018.

IMLS. (2018). *Purposes and priorities of the library services and technology act*. URL: <https://www.imls.gov/grants/grants-state/purposes-and-priorities-lsta>. Last accessed: 6 September 2018.