

# Leveraging Open Data for Community Benefit: Next Steps

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This report and other project materials can be found on the project website:  
<https://tascha.uw.edu/projects/leveraging-use-of-open-data-by-public-library-staff-for-community-benefit/>

# Grant Personnel

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## Acknowledgements:

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# Executive Summary

This planning grant, “Leveraging Open Data for Community Benefit”, focused on exploring the potential of open data to assist library staff in planning library services and programs to address the needs of their communities. The project team knew from the beginning of the project that we had a lot to learn. We structured the project to ensure that we would have a high degree of contact with practitioners from a variety of libraries to help us learn in the short time we had for this project. We also wanted to engage with library practitioners to check some of the underlying assumptions that we had as we entered into the project. Similarly to public libraries, we had to adapt our plans for the project to respond to the impacts of the COVID-19 pandemic. Luckily, we had active partners in the public library field who responded enthusiastically to our calls for virtual participation in our interview and workshop activities and shared their insights and wishes as it relates to their communities and the use of open data to plan library services and programs.

A planned output from this planning grant was the creation of a detailed “roadmap” that addressed the technical, organizational, and cultural challenges discovered in the project phases that would need to be addressed to develop an open source data platform for the public library field. Based on our interactions and what we heard from the participants, we determined that further research is needed before developing a data platform. Once it became apparent from our interactions with library staff that we still had much to learn about how open data might be more deeply integrated into planning for library programs and services, we decided that instead we would assemble this document to summarize our learnings and outline a potential next stage of research and engagement.

While the end product of this grant has changed in response to what we’ve learned, the project itself has generated valuable information that will assist us in planning the next steps. Our project activities generated qualitative data from interviews and workshops. Our analysis of this data helped us to learn more about how library staff currently use open data and how they might use it in the future with additional resources and support.

Our interviews with staff at public libraries, state libraries, and with open data researchers focused on learning about the use of open data in public libraries. For the most part, we learned that library staff did not regularly engage with open data to assist in their planning of specific programs. There were some examples of using open data to assist with strategic planning or thinking about library services overall. The other types of staff that we interviewed provided support to public library staff for a variety of open data needs. For state library staff in our interviews, this assistance often revolved

around library-centric data (e.g. data reported as part of the required annual state report) rather than community open data. We provide additional detail about who was interviewed, the questions that we asked, and additional findings in the “Interviews” section of this report.

The information from the interviews fed into how we structured the workshops and led us to focus on learning about desired features for an open data platform. In the workshops, we facilitated multiple sessions that explored the common needs and desired functions for an open data platform. These sessions produced many insights from interactions with the participants. This included an observation that although the settings and locales of the participants were very different, many of them shared similar interests and questions about their communities. We provide additional detail about who participated, the structure and content of the sessions, and additional findings in the “Workshop” section of this report.

One of the humbling aspects of research is realizing how little you know about a subject. The flip side of that is how research helps you to see the flaws in assumptions that you had and point you in new directions that you had not planned for and which hold great potential. We submitted a project proposal to IMLS for additional funding that helps us to move this work forward and continues exploring the potential of open data in this area. Our proposal describes how we would provide opportunities to MLIS students to acquire and apply open data and GIS skills in collaboration with practicing librarians to address opportunities and challenges in their communities. We provide additional detail about our proposal, its structure and potential examples, in the “Next Steps” section of this report.

If you have feedback, comments, or suggestions on this report or other project materials or have interest in working with the project team in this area, please contact Chris Jowaisas ([chrisjow@uw.edu](mailto:chrisjow@uw.edu)).

# Project Overview

Our team conducted a one-year National Leadership Planning Grant to examine the data needs of public library staff and determine which of those needs can be met through the use of open data to support effective program, service, partnership, and advocacy planning.

For the purposes of this research we are using and have communicated to participants, the Open Data Handbook's definition of open data:

Open data is data that can be freely used, re-used and redistributed by anyone - subject only, at most, to the requirement to attribute and sharealike.<sup>1</sup>

Our key research question asked: what were the primary barriers among library staff to using open data for planning and decision-making? We investigated possible answers to this question by conducting qualitative interviews, a survey, and a virtual workshop (due to COVID-19 restrictions).

After these activities, we believe that the primary barriers among the library staff participants are a complex set of interconnected challenges, including a lack of awareness of how open data could be used for planning purposes and the potential for using current open data tools, and a general lack of capacity for engaging with open data. Overall, the participating library staff expressed a great interest in building their capacity and engaging with these tools to utilize them in planning activities.

We also analyzed open data sets to vet whether they could be used at a relevant level to answer questions that library staff asked about their communities. We used these datasets to generate questions that could be answered with that data in our workshop exercises to understand the interests and priorities of our participants when it came to answering questions about their communities.

The activities described above inform our plan for future research and support of public librarians and MLIS students in using open data. In each of the next sections, we will go into greater detail for each of the project activities.

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<sup>1</sup> <http://opendatahandbook.org/guide/en/what-is-open-data/>

# Interviews

## Process

The interviews consisted of a set of questions (see Appendix A) that covered the interviewee's role in their organization, their experience with developing programs or services, and interest and use of open data related to their community. We started with the hypothesis that open data could be useful to library staff and that it was currently under-used and difficult to access. The interviews allowed us to check this hypothesis and learn more about the way that public library staff do use, and want to use data in planning.

## Participant Sampling

For the first phase of our project, we interviewed nineteen public library staff and six representatives from state library agencies and open data projects. Interviewees were recruited using a convenience sample of professionals within the research team's network and with a snowball sampling of referrals from interviewees. We made an effort to interview library staff from multiple different library service area sizes and areas of the country.

A breakdown of participant library locales from the Institute for Museum and Library Services' Public Libraries Survey (PLS) is shown in the table below:

| IMLS Locale <sup>2</sup>  | Count of Participants |
|---|-----------------------|
| 11 – City, Large: Territory inside an Urbanized Area and inside a Principal City with a population of 250,000 or more.  | 4                     |
| 12 – City, Mid-size: Territory inside an Urbanized Area and inside a Principal City with a population less than 250,000 and greater than or equal to 100,000. | 2                     |
| 13 – City, Small: Territory inside an Urbanized Area and inside a Principal City with a population less than 100,000.   | 1                     |
| 21 – Suburban, Large: Territory outside a Principal City and inside an Urbanized Area with a population of 250,000 or more.                                   | 2                     |
| 23 – Suburban, Small: Territory outside a Principal City and inside an Urbanized Area with a population less than 100,000.                                    | 1                     |

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<sup>2</sup> Pelczar, M., Frehill, L. M., Nielsen, E., Kaiser, A. & Li, J. (2021). *Data File Documentation: Public Libraries in the United States Fiscal Year 2019*. Institute of Museum and Library Services: Washington, D.C. pp. 25-26

|   |           |
|---|-----------|
| 31 – Town, Fringe: Territory inside an Urban Cluster that is less than or equal to 10 miles from an Urbanized Area.   | 1         |
| 32 – Town, Distant: Territory inside an Urban Cluster that is more than 10 miles and less than or equal to 35 miles from an Urbanized Area.   | 4         |
| 42 – Rural, Distant: Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an Urbanized Area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an Urban Cluster. | 3         |
| 43 – Rural, Remote: Census-defined rural territory that is more than 25 miles from an Urbanized Area and more than 10 miles from an Urban Cluster.  | 1         |
| <b>Total</b>  | <b>19</b> |

## What Did We Learn

Through our interviews with librarians, we learned about current practices and potential areas for further exploration when it comes to open data and tools. These initial interactions helped us to gain insights into how library staff work to understand the needs of their communities and the opportunities that exist for using open data to add to or deepen that understanding.

When it comes to current practices, the responses from the interviews described that planning for most library programming was driven by qualitative data, primarily through staff/patron interaction or feedback on existing programming. For quantitative data, the staff often turned to internal library data, such as historical program attendance data and internal resource data such as staff and resource availability. Ideas for programs were generated in an organic way, often through informal interactions with patrons or among staff, as opposed to being driven by top-down planning.

Planning is also impacted by the partner network that the library has within their community. Partners play a variety of roles in working with libraries to deliver programs or services. These can range from exchanging information with staff at partner organizations to a deeper involvement in planning and delivering programs. The depth of involvement can vary across each partner depending on their capacity and interest. Partners and other community organizations, such as schools or other government agencies, also served as sources of information which library staff relied upon to check their assumptions about the community and community needs.

Most staff did not mention the use of open data as a planning tool or that there was specific data that they were looking for that they could not find when seeking information about their community. The most common use of open data was in the preparation of grant applications. Common data sources included Census Bureau, school district

websites, and local partners. Multiple participants described a concern that the most recent decennial census would not accurately represent their communities due to political or privacy concerns of community members that the library staff felt led to an undercounting of certain members of the community.

A common theme among almost all the interviewees was a high degree of interest in understanding why community members are not using the services of the library or attending library programs and what drives this lack of engagement with the library. This is not a question that can be answered with open data, but did raise questions among the research team about how libraries might better utilize patron usage data to understand who is and is not using the library’s services.

## Workshop

### Recruiting Participants

We recruited participants by inviting interview participants to attend, or to suggest other library staff that might be interested in participating. We also reached out to the Association of Rural and Small Libraries (ARSL) for assistance in recruiting additional participants through their listserv. Workshop participants represented a wide range of service area sizes - from a service population of 1,100 all the way up to 1.4M. The library staff came from a variety of locales for the workshop as seen below:

| IMLS Locale <sup>3</sup>  | Count of Participants |
|---|-----------------------|
| 11 – City, Large: Territory inside an Urbanized Area and inside a Principal City with a population of 250,000 or more.  | 3                     |
| 12 – City, Mid-size: Territory inside an Urbanized Area and inside a Principal City with a population less than 250,000 and greater than or equal to 100,000. | 2                     |
| 21 – Suburban, Large: Territory outside a Principal City and inside an Urbanized Area with a population of 250,000 or more.                                   | 2                     |
| 23 – Suburban, Small: Territory outside a Principal City and inside an Urbanized Area with a population less than 100,000.                                    | 1                     |
| 31 – Town, Fringe: Territory inside an Urban Cluster that is less than or equal to 10 miles from an Urbanized Area.   | 2                     |

<sup>3</sup> Pelczar, M., Frehill, L. M., Nielsen, E., Kaiser, A. & Li, J. (2021). *Data File Documentation: Public Libraries in the United States Fiscal Year 2019*. Institute of Museum and Library Services: Washington, D.C. pp. 25-26

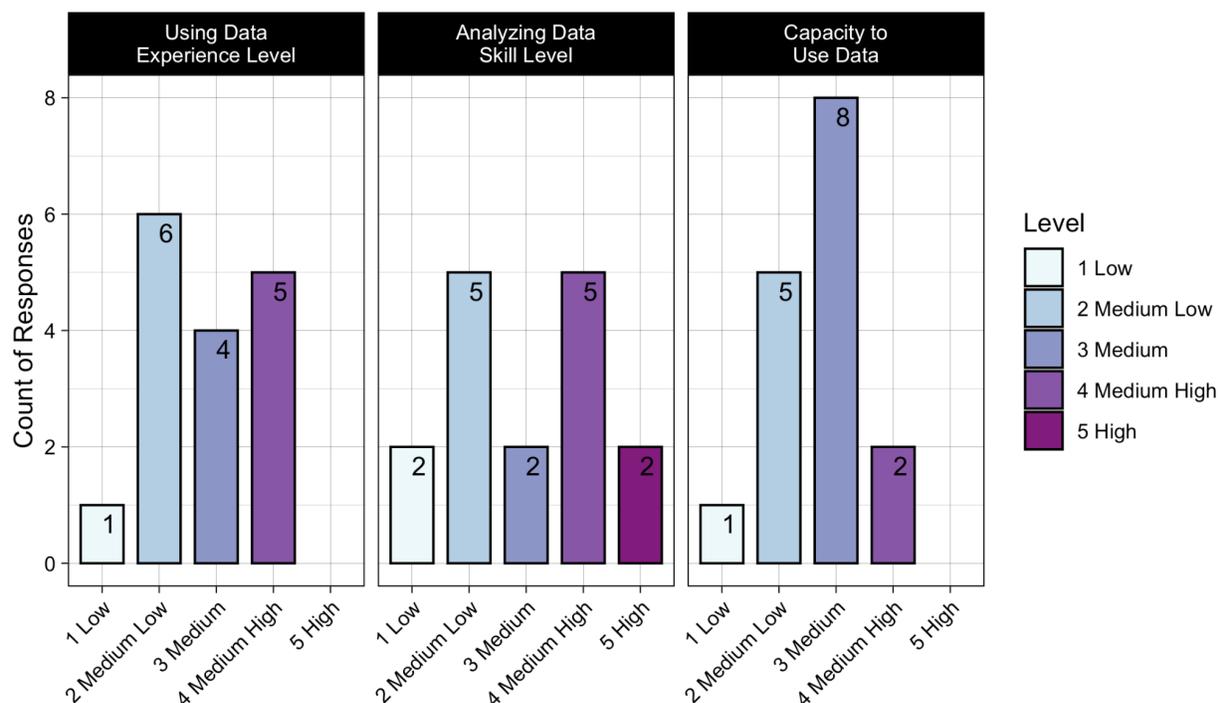
|   |           |
|---|-----------|
| 32 – Town, Distant: Territory inside an Urban Cluster that is more than 10 miles and less than or equal to 35 miles from an Urbanized Area.   | 1         |
| 42 – Rural, Distant: Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an Urbanized Area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an Urban Cluster. | 4         |
| 43 – Rural, Remote: Census-defined rural territory that is more than 25 miles from an Urbanized Area and more than 10 miles from an Urban Cluster.  | 3         |
| <b>Total</b>  | <b>18</b> |

While we had to switch our plans from an in-person workshop to a virtual workshop due to COVID-19 and adjust our initial approach, we did see a benefit of being able to have a geographical and locale diversity of library staff attending. We’re not sure that this would have been possible to the same degree if we had gone with the original plan of inviting only library staff from Washington libraries.

**Participant expertise in data use, skills, and capacity**

Prior to the workshop we surveyed participants to help us understand their familiarity with using open data, to help us understand their roles in their libraries, and their interest in topical areas utilized for discussion in the workshop sessions. We received 16 responses. For those that responded to the survey, the graph below indicates the participants self-reported data use, skills, and capacity.

## Pre-Workshop Survey: Data Use, Skills, & Capacity



Workshop participants had a range of existing expertise with data, and likewise described reliance on various types and sources of data for their professional responsibilities. Informal patron feedback (“word of mouth”), library program attendance, Census data, and the IMLS’ Public Libraries Survey were commonly cited resources. Similar to interview participants’ methods, workshop participants primarily utilized interactions with patrons at service points, and programming statistics to gauge patron interests and measure the success of current initiatives.

Similar to the interview responses, the workshop survey responses mentioned using a combination of internal and external data for planning and enhancing programming, and described the value of non-library specific data to more acutely understand the needs of their patron base, including the ability to verify information learned through representative patron interactions. Access to civic data, such as commute patterns, and data acquired through partnerships, such as the local Alzheimer's Association, helped to characterize their patron base outside the physical bounds of the library. Participants frequently formed questions around interrelated issues- for example, how commuting patterns and the availability of remote work affect housing demand- demonstrating recognition of the nuances of their communities’ needs within systemic issues.

## Workshop Structure

The virtual workshop utilized exercises, modified from Robin Davis's Participatory Paper Prototyping Method<sup>4</sup>, aimed at development of a prototype of a website that would best display data and answer questions they had about their communities utilizing open data. The goal of the workshop was about understanding what questions are most important to library staff, how they would use answers to those questions in their work, and how they would like to see those answers presented. The focus of the activities was oriented towards understanding functionality rather than layout or design of a site.

Participants completed activities that focused on exploring the potential of open data in both general and small group sessions. The general sessions at the beginning and end of the workshop served to provide a shared understanding of the project to start the week and the final session provided a summary of preliminary results and an opportunity for participant reflection at the end of the workshop. All participants attended these sessions.

The breakout sessions had small groups of participants working on activities focused on topical areas, such as digital equity or health. These topical areas were selected based on responses to the workshop survey. Each breakout session was structured to focus on two topical areas with discussion on the first topical area centered on questions that had been generated by the project team through an analysis of open data sets (see examples in Appendix B) and that could be answered from this data. The activity focused on discussing and prioritizing questions to help the project team understand the interests of the participant in relation to their community's situation and to see if there was consensus around certain questions.

The second topical area for discussion had the participants generate questions and share them with the group for consideration, discussion, and prioritization (see Appendix C). The intent of this exercise was to have participant generated questions that could be utilized for later research into whether they could be answered with open data sources and to understand the priorities for library staff in these topical areas.

Topical areas that were discussed within the general or breakout sessions included:

- General community demographics
- Digital Equity
- Employment

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<sup>4</sup> Davis, R. C. (2020, March 10). D4D Presentation: Participatory Paper Prototyping. Retrieved from <https://go.ncsu.edu/proto>

- Food and Nutrition
- Children & Youth / Education (K12)
- Economic Opportunity
- Health

We initially entered the workshop sessions expecting that some of the topical areas would fall away in terms of priority and that we would be dealing with a smaller set of topics after the exercises. Instead, a key issue that arose from these discussions and exploration was that our initial assumption on approaching the challenge of using, analyzing and presenting data was centered around these topical areas in isolation. The participants rightly pointed out that many of these topical areas are complex and interconnected and showed how they viewed issues facing their communities. While the data within a topical area was useful in isolation, the full power of it would be realized only when its relationship to other data was made more clear. Participants expressed a desire for a full understanding of their communities across all of these areas whenever possible.

This also translated into the type of features and functionality that participants expressed the desire for in the prototype. Numerous times participants pointed to being able to visualize the data in a spatial manner with configurable maps or areas of interest. They also expressed an interest in understanding trends, not just single data points, and eventually being able to see forecasts for the data. We'll cover more of what we learned from these sessions both in terms of data and functionality for a potential web site in the next section.

These sessions were well-received by the participants and highly useful to the project team as we began thinking about our potential next steps. One observation that was shared by a participant was that even though we had a variety of library sizes and locations, there was a sense that everyone was focused on similar challenges. The participant described it as follows:

“...one of the things that really struck me with every conversation that we had was regardless of the size or the demographics of who we were serving, everyone was really trying to solve the same problems. We often miss that you know if you're in a big city or you're in a suburb or you're in a rural area and you're like well my problems are unique, and while they are, they're also very similar. And I just was very much struck by that and thought it was quite fascinating to hear people thousands of miles away from me having the exact same questions.”

## What Did We Learn

The workshop sessions produced learnings primarily in two areas related to a potential tool - the primary purpose and the ideal features or functions.

### **The primary purpose(s) of the tool:**

Librarians' desires for ongoing, holistic perspectives on their communities influenced their vision for a multi-purpose data tool. Initial thinking from the project team about the proposed tool's purpose focused on it being a one-stop resource for community data arranged by topic. Within each workshop session, participants posed questions regarding interrelated issues, drawing connections between the topical areas. Individual questions were often framed in relation to other topic areas, such as the intersection between mental health, substance use disorders, and experiences of homelessness, and aimed at understanding the role the library could play within the larger environment of their community. Participants posed granular questions specific to their communities (e.g. What times do homeschooled kids want to be at the library?), but discussions revolved around shared structural issues facing participants' communities.

Beyond just learning about their community, library staff also expressed the shared desire to identify community partners who could already be working on a solution in their community. While the interviews and surveys pointed to active connections with partners from many of the participants, they also acknowledged that there were gaps in those relationships. Part of exploring data would also include a function to explore potential partners. Each group of participants described the difficulties in facing local issues alone as a single library system or branch, and the desire to contribute to ongoing local efforts, rather than duplicate them.

A few participants named existing partnerships they wished to strengthen and enthusiasm for expanding their current network as they gained clarity on the issues facing their communities with the data tool. Each breakout group in the workshop described the need for data as a means to find solutions to community issues, but frequently cited institutional barriers such as capacity, personnel, and financial resources. Given these limitations, the facilitation of collaborative relationships would likely help sustain or grow local initiatives.

A final possible potential purpose suggested by one participant centered around the tool serving as a way to build a community of practice for library staff. By linking case studies of libraries that had used data for planning a specific program or service in their community from the platform, other libraries could learn from these examples. This would also build awareness of and the value of open data to public libraries.

**Ideal features/functions:**

Each workshop session expanded on the pre-supplied questions (Appendix B) to discuss the complex nature of issues facing their communities. This influenced their vision of the tool, notably the ability to correlate and compare variables, and to discern relationships between disparate data sets for richer analysis. Participants also discussed the desired granularity and currency of data accessible through the tool, and were enthusiastic about a full range of options for geographic scope and time comparisons.

Librarians commonly cited how legal “service area” designations did not adequately reflect their patron base and preferred access to data with customizable geographic boundaries. They discussed the possibilities for data specific to branches and the opportunity for comparison between applicable zip codes, between county and state demographics, and to access information on libraries across the United States with similar characteristics. Having the flexibility to customize map boundaries was a popular suggestion so a library could adapt the data to reflect a specific configuration that might not follow the legal service area definition. One example mentioned was a partnership with a local school district whose boundary does not match the library’s. In this scenario, the library staff wanted to understand differences between those two areas when discussing potential programs or services offered to the students of the district.

Librarians were highly interested in identifying trends for specific populations over a customizable time range, including the ability to compare relationships between multiple variables. These features were primarily inspired by a desire for a deeper understanding of their communities, but also to be able to measure the impact of efforts. While they were interested in historical comparisons, they likewise wanted the most current data (a challenge in itself), and described an interest in predictive analytics.

To push participants to think expansively when it comes to potential features, we provided a “magic square” icon in the prototyping exercises. This icon could be used to help participants explain a function or concept that didn’t neatly fit into the other more standard functions (e.g. “search” or “map”). One such example was the ability for the tool to adapt to future variables such as new legislation. One participant’s example for such a query was: How will the introduction of free public school lunches affect food insecurity- and how will we as a library need to respond/adapt?

Due to time and staffing constraints, as well as varying degrees of data literacy, many librarians described a need for easily-obtainable and legible visualizations. Customizable maps, and graphs accompanied by narrative summaries were popular

desired features. A few librarians voiced an interest in access to the raw data in addition to an immediate visualization in order to perform their own analysis.

Participants' interest in both straightforward presentation and interactive options reflect the different objectives they aim to achieve with the data, including presentation to different audiences. Visualizations should be easy to access and also use with various audiences, including other library staff, external community and government partners, and potential funders.

Librarians described a few standard options for navigation, including a keyword search, filters, and drop-down menus with pre-set topics (e.g. job competencies by industry, income brackets).

Location was frequently cited as a key element for demographic queries, where users could specify their library branch/system and be directed to relevant data. One participant suggested a starting page organized around topical areas that would then allow further customization by location.

A few specific mechanisms for user experience arose in discussions of navigation, likely attributed to the participants' range of data expertise. A few librarians appreciated the phrasing of the supplied questions, and suggested ways in which navigation could center around a fixed set of questions within the tool. Others described a guided experience with tips and tutorials that assist with queries, selection of data sets, analysis, and creation of meaningful visualizations.

Project participants stated that most of them could often find relevant data for their community, but there was less clarity about what that data meant in conjunction with other data or how they could apply it to their planning of library programs or services. Several participants found the manner in which the project team framed the questions used in the workshop exercises useful in providing a perspective that they might not otherwise have employed. Participants noted challenges related to the timeliness of data and also the impact of the COVID-19 pandemic when comparing the same data from pre- and post-pandemic periods. One method for overcoming the timeliness challenge was working with local partners to obtain recent data that might not be available as open data. An example included contacting the school district to understand changing demographics represented in new student data as this was often the most quickly compiled and available data to show demographic changes in the community. These local relationships prove valuable in these cases, but are not scalable from a technical point of view.

It was clear at the end of the workshop that library staff were very interested in using open data to help understand their communities and also as a potential planning tool for

programs and services. But to ensure that a data platform for open data would be widely used, it needs to include timely data, it needs to be targeted to the needs of a variety of staff, and it needs to have a clear value proposition.

## Dataset Identification

The project team began a process of identifying open data that they felt would be valuable in helping public library staff learn about their communities and assist them in planning programs and services. We developed a set of criteria that we used to guide our evaluation and selection of potential open data sets. The criteria included the following:

- Large regional applicability, preferably national
- Nuanced data down to local level
- Data applicable to topics mentioned in interviews
- Data published or updated in past 2 years - preferably updated on annual basis
- Easy to access by API or download
- Data completeness
- Data cleanliness
- License / Use

On almost all topical areas explored in the workshops, we were able to find data that answered questions that library staff were interested in for their community. A challenge that became more apparent as the workshop went on was not a lack of available, relevant data for library staff to utilize, but the integration and maintenance of the vast number of data sets that could be used across the topical areas.

We found several “boutique” data sets that were focused on timely topics, such as the opioid epidemic, that met most of our criteria for potential inclusion. These datasets highlighted a challenge in that they were more timely than those produced by the federal government, but also potentially could disappear as funding or interests of the entity publishing or collecting the data shifted.

The preliminary analysis of datasets will be made available on the project website at the end of the project. Ongoing analysis of datasets and their applicability to planning will be continued as part of our ongoing work in this area and the dataset analysis document will be updated as needed.

## Next Steps

Our initial plan for next steps envisioned a detailed plan for moving directly into developing a data platform. Based on our interactions with participants, we realized doing so would be premature. The feedback we received from interview and workshop participants shaped our potential path forward and led us to realize that further engagement and learning were needed before development begins to ensure a successful data platform emerges from that process.

Our plan for that further engagement and learning was outlined in our proposal for a 3-year National Leadership grant that we submitted to IMLS. The proposal builds on what we have learned, is structured to address gaps in our knowledge while continuing our effective engagement strategy with library staff, and will provide useful experiences and skills to MLIS students. The proposal includes multiple phases that seek to address some of the challenges identified in our planning grant related to the use of open data by library staff.

Our first phase involves further analysis of relevant open datasets, existing open data platforms, and the development of geospatial datasets that will enable flexible community analysis related to legal or library-determined service areas. These curated datasets, platforms, and geospatial resources will be made available to all public libraries and supporting organizations, such as state libraries, library associations, and academic researchers.

These resources will also serve as a foundation for our next phase which is focused on creating curricular resources that can be utilized in MLIS programs to teach GIS and community analysis skills utilizing open data resources. These curricular resources will also be made available to the broader audience of professional development and continuing education providers so that they can provide training opportunities to existing library staff who are interested in this topic. The curricular packages would be created in collaboration with staff from other institutions and organizations that are interested in professional development within the library field. We know that while we can reach MLIS students effectively, it is only by making these resources freely available that we could hope to scale these efforts to the library field by their adoption by library associations, state libraries, and other groups who provide the bulk of continuing education to the field.

To ensure that the resources produced in our 2nd phase are relevant, we plan to provide opportunities for MLIS students to work directly with public library staff to apply the GIS and community analysis skills through directed research groups (or other types

of educational experiences). We envision that the collaborative experiences will continue to build our knowledge in two critical areas: 1) additional use cases for the value of open data to public library staff; and 2) an increased understanding of the process by which public library staff plan programs and services. The collaborations will also create useful prototypes that can then be refined to address the interconnected nature of challenges that exist in communities as expressed by the participants.

We also expect that if we are able to successfully demonstrate the value of open data to public library staff that there will be additional online and in-person opportunities for additional training by ourselves. These could take the form of in-depth training that mirror successful initiatives around data, like the Research Institute for Public Libraries (RIPL) or the Software Carpentry models for teaching skills through community involvement.

Regardless of the decision regarding further funding support from IMLS or other sources, we have already planned to continue this work with a directed research seminar in the 2022 Winter Quarter at the iSchool. The research seminar will focus on geospatial data and will be our initial efforts around furthering the objectives of our planning grant. We feel that this area of research holds great potential for public libraries and are excited to continue our collaboration with public library staff and build new relationships with MLIS students to prepare them for future careers.

# Appendix A

## Interview Questions for Public Library Staff Participants

1. Can you please describe your role at your organization?
2. Do you work at more than one physical location? If yes, how many locations do you currently work at?
3. Do you participate in program or service development or implementation? If so, What programs have you participated in developing or implementing in the past two years?
4. How did you or your colleagues choose these particular programs and services?
5. Do you currently work with partners to deliver any of these programs or services?
  - a. Prompt: For example, a library may partner with the local fire department to host a fire safety event.
  - b. Potential Follow-Up: Were any of these programs and services determined to be priorities because of elected officials priorities or partner priorities (e.g. they reached out to the library for help with implementation)?
6. What information do you seek when planning a new program or service?
7. What do you wonder about your library's community?
  - a. Prompt: What information would you like to know about the community?
8. What opportunities and what challenges are you seeing in your library's community right now?
  - a. Prompt: You talked about challenges / opportunities - could you tell us more about challenges / opportunities?
  - b. Potential Follow-Up: Do you see these changing in the next couple years or are these typical?
  - c. Potential Follow-Up: What opps/challenges have you seen in the past two years?
9. Where do you turn for information when you want to find out something about your community?
  - a. Prompt: Do you have specific examples?
10. Have you looked for data or information about your community that you weren't able to find?
  - a. Prompt: Do you have specific examples?
11. Can we follow up with you if we have further questions?

# Appendix B

## Questions Provided to Workshop Participants

| Demographics   |
|--|
| Question   |
| What is the average commute time for people in my library's community?                             |
| What is the rate of home rental vs. home ownership in my library's community?                      |
| What are the levels of educational attainment in my library's community?                           |
| What is the income inequality in my library's community?   |
| What is the unemployment rate in my library's community?   |
| How many people are lacking health insurance in my library's community?                            |
| What languages are spoken in the homes in my library's community?                                  |
| Are there veterans in my library's community?  |
| What types of households make up my library's community? (eg - single, married, w/o kids, w/ kids) |
| What is the school enrollment in my library's community?   |
| How many people with disabilities are in my library's community?                                   |
| How many building permits were issued last year in my library's community?                         |
| How do the upward mobility rates in my library's community compare to surrounding areas?           |
| How many school-age children in poverty reside in my library's community?                          |
| How are income-level demographics changing in my library's community?                              |
| How are race & ethnicity demographics changing in my library's community?                          |

| <b>Digital Equity</b>   |
|---|
| <b>Question</b>   |
| Who has access to a computer at home in my library's community?   |
| Who has broadband at home in my library's community?  |
| Who has access to broadband in my library's community?  |
| Who relies on a smartphone for their primary internet connectivity in the community?  |
| Do people access the internet at public places at a higher rate in my state versus others?  |
| What types of online activities do people in my state do the most? (e.g searching for a job online or taking classes or participating in job training online) |
| Which age groups do online activity X (example) the most?   |
| Which areas of my community have the lowest rate of broadband subscriptions?  |
| How do the internet speeds in my community compare to state / national averages?  |
| How knowledgeable are my library's community members about online privacy?  |
| What is the level of digital literacy in my library's community?  |
| Are there specific groups of people in my library's community who could benefit from digital literacy skills training?  |

## Economic Opportunity

### Question

What are the major employment sectors in my library's community?

What jobs will be available in the future in my library's community?

What jobs pay the most in my library's community?

What skills do I need for X job and where can I gain those skills in the community?

What is the best idea for a small business (based on demand) in my library's community?

What are the demographics of the workforce in my library's community?

How many businesses filed for bankruptcy last year in my library's community?

What are the unemployment rates in my library's community?

| <b>Food &amp; Nutrition</b>   |
|---|
| <b>Question</b>   |
| Do library community members suffer from food scarcity?                                     |
| How does my library community compare to others in terms of access to healthy food?         |
| Are there specific populations in the community that are at greater risk for food scarcity? |
| How many children are food insecure in my library's community?                              |
| How many community members are food insecure and yet don't qualify for nutrition programs?  |
| What percentage of my community is able to maintain a healthy diet?                         |
| Are there specific health issues in my community linked to diet (e.g. diabetes or obesity)? |
| What are the levels of physical activity across my community?                               |
| How many households may face transportation challenges in accessing healthy food?           |
| Do certain segments of the community have lower access to healthy food?                     |
| Does my community spend more on restaurant food than other communities?                     |
| How many K-12 students in my library's community are eligible for free or reduced meals?    |

# Appendix C

## Questions Generated by Workshop Participants

| Employment   |
|--|
| Question   |
| How many people in the community are <b>underemployed</b> and <b>unemployed</b> vs employed?   |
| What do people identify as personal barriers to employment?  |
| What are the migratory patterns in my community? <ul style="list-style-type: none"><li>○ What percent of community workers are commuting in from elsewhere vs. community members commuting out for work?</li></ul>   |
| What types of employment exist in the community? <ul style="list-style-type: none"><li>○ Which industries?</li><li>○ What levels of employment?</li><li>○ How many small business owners and entrepreneurs?</li></ul>  |
| What workforce development resources/organizations are available in the community? <ul style="list-style-type: none"><li>○ How many are religious based vs. secular?</li></ul>   |
| Are we (the library) reaching the people in most need of employment resources and services?  |
| How can the library be an institution of trust for seeking resources (when there might be a stigma around using other public services) but not duplicate services that already exist?  |
| What shifts are people working? (When do people have free time?)   |
| What new industries are coming into the community and/or growing? <ul style="list-style-type: none"><li>○ What are the industry trends?</li></ul>  |
| What types of non-traditional jobs do people engage in? <ul style="list-style-type: none"><li>○ Are there jobs or non-traditional industries that focus on a trade or barter system?</li><li>○ What groups in the community are relying on alternative systems of trade?</li></ul> |
| What languages should programs/services be offered in?   |
| What languages do those who are seeking help with job searches speak?  |
| How many people are under employed due to a non-US professional accreditation?   |
| Does uniformed security have an impact on attendance/participation in employment   |

related services (or any other services)?

Are we duplicating services that other organizations in the community are already offering?

What is the best way to provide services (e.g. we tried a group learning environment and didn't feel it was successful)?

| <b>Children/Youth &amp; Education (Pre-K thru 12)</b>   |
|---|
| <b>Question</b>   |
| What capacity level do parents have to engage in their children's education?<br><ul style="list-style-type: none"> <li>○ Do we plan programs directly for kids or go through parents or educate parents?</li> </ul> |
| How many students are bilingual? What bilingual education environments exist?   |
| What are specific cultural expectations of the parental role?<br><ul style="list-style-type: none"> <li>○ For example, what services would the Latinx parent community want and embrace?</li> </ul>                 |
| What is the status of digital access for children, especially when faced with the challenge of switching to a virtual learning environment?   |
| How difficult was it to shift to a virtual learning environment?  |
| How did the lack of access to school lunches affect children?   |
| What is the level of digital literacy of children/families in the community?  |
| What types of education exist (e.g. is the local school high in tech education but low in arts education)?  |
| Can we partner with other organizations to offer employment / learning opportunities (spark) / internships?   |
| What opportunities exist for youth - volunteer, service learning, place-based learning?   |
| What after-school or out-of-school time programs exist in the area?   |
| What are the atypical learning environments available (e.g. parks, etc.)?   |
| Who is available as an educational consultant (e.g. wildlife and fisheries public outreach / education programming)?  |
| How are children being educated (homeschool, private school, public school, other)?   |
| What equipment is most useful to include in a makerspace?   |
| How can the library help with the (non-four-year college) post-secondary educational opportunities such as technical degrees, 2-year programs, apprenticeships?   |
| What organization could the library partner with on grant opportunities?  |
| How can we provide services equitably to a diverse population?  |
| How many children are unhoused?   |
| How many children serve as language interpreters for their families?  |

| Health   |
|--|
| Question   |
| What is the health profile of the community and are we providing programs that fit that need (e.g. do we have an aging population, is obesity a health risk in our community)? |
| Who does not have health insurance (needed at local level)?  |
| Are there gaps in health insurance (e.g. long term care coverage)?   |
| Are there “healthcare deserts” in my service area where it is difficult to access health services?   |
| Is local healthcare affordable?  |
| Who is affected by an aging population? Who needs home health care? How can we support families of those populations?  |
| How many community members are homebound?  |
| How many community members need mental health care and are they being supported and given the resources they need?   |
| What are the general demographics of the community health-wise?  |
| Are the health needs of those experiencing homelessness being met?   |
| What are the changes in the number of people needing mental or emotional care?   |
| How many elderly are “orphaned”?   |