

MARCH 2023

**DATA  
LANDSCAPE  
PROJECT**  
FINAL  
REPORT

This project was made possible through the Institute for Museum and Library Services (IMLS) LSTA funds and a partnership between the Wisconsin Department of Public Instruction (DPI), Southwest Wisconsin Library System (SWLS), and WiLS.



WISCONSIN DEPARTMENT OF  
**Public Instruction**



## Executive Summary

In 2022, the Southwest Wisconsin Library System (SWLS), in partnership with WiLS, embarked on an LSTA-funded research project on the current realities and future needs of public library staff's data skills across the state of Wisconsin. In an era with increasing emphasis on data-driven decision-making, a key component missing from the conversation has been a foundational assessment of the statewide "data ecosystem" - the intersection of all the people, organizations, and resources in the state involved in library data usage and how they currently function. To fill this gap, the Data Landscape Project was initiated to gather information and make data-informed recommendations that accounted for the different realities and roles of public library staff. Consideration was first given to how the data ecosystem currently functions before examining the role of equitable training, access, and resources for librarians in promoting effective and meaningful data use. With this information gathered, tailored recommendations were developed on how to promote and support library-centric data use with an eye toward addressing obstacles while expanding opportunities.

The research took a mixed-methods approach with a statewide reach, pairing quantitative data gathered from a survey with qualitative data gathered through a series of focus groups. A number of key findings were identified during the research phase about the current realities of library data use for staff:

- Overwhelmingly, survey respondents (81%) **are using data professionally on the job at least monthly.**
- The majority of this work is **data collection** (74%) followed by **creating data visualizations** (66%).
- Survey takers were asked to describe the reason or purpose behind their professional data use; the top two selected items were to **meet reporting requirements** like the Annual Report (61%) and to **facilitate collection development decision-making** (60%).
- The types of data people are accessing and using in professional library contexts are primarily coming from four different sources: **internal library data (e.g. incident reports, feedback forms, etc.), Annual Report data, US Census data, and OverDrive data.**
- When it comes to data analysis and visualization tools, the majority of people are using **free or low-cost and readily-accessible tools** like Microsoft Office products, calculators, and Canva.
- Library staff indicated that they are most interested in seeing their data in one of two ways; **trend data** related to different library metrics (e.g. circulation or library visits data over time); and **comparison data** of their library with similar libraries for benchmarking purposes.

- Current professional library data collection was reported as being driven most strongly by outside reporting requirements, creating the sense that **data is being collected and sent “up”** to someone at the board, municipality, and/or state level.

In addition, public library staff identified a number of needs and desires to improve professional data use in library contexts:

- A **single, exhaustive repository of data resources** tailored to libraries so that people have a “one-stop shop” for data-related resources and tools.
- Curated **opportunities to collaborate** and learn from peers around library data use.
- Access to **“plug-and-play” data resources like dashboards and data templates** as a foundation for data use across the state.
- Assistance in the **identification of meaningful peer comparisons** for benchmarking library data, especially Annual Report data.
- Real-life, **hands-on training opportunities**, especially ones that allow participants to use their own library data.
- Access to **a more formalized “data person”** within each system who can provide expertise. Not all libraries have access to a resource like this at their library or system.
- **Opportunities to be more involved** in the review of Wisconsin’s Annual Report process through a data working group or similar effort.

Across the state of Wisconsin, public library and public library system directors and staff are engaged daily in professional work that requires them to use data in a variety of ways.



However, many of these same people have not ever received any professional or academic training in data, creating gaps in knowledge and contributing to a general lack of confidence around data use. To address these current realities and plan for the future, a pathway for actionable data use was developed for the state. At the heart of these recommendations is a clear need for tiered data support and resources. *All* libraries need a baseline of support to facilitate basic consistency in data use. From there, stakeholders have differing, additional needs in order to develop a fully-scoped data ecosystem for the state.

## Project Overview and Purpose

In recent years, there has been increased awareness of the value of data-driven decision-making for libraries. Some national initiatives, such as the [Measures that Matter](#) initiative, have provided a consolidated framework for considering the next steps in what library-centric data use looks like through a more theoretical lens. In addition, organizations like the [Public Library Association](#) have developed resources to increase public library data use (especially use of IMLS' [Public Libraries Survey](#) data); however, these resources often require money, time, and skills to be used effectively. Statewide, a number of data-related training opportunities have been offered for public library staff via a variety of channels, including the Wisconsin Department of Public Instruction, universities and library schools, as well as library-focused nonprofit partnerships. However, a key element missing has been a fully informed picture of library and library system staff's current skills around data use and their real and perceived strengths and challenges related to actionable data use. A 2021 LSTA-funded, DPI-supported workshop, "Building your Data Confidence," allowed WiLS to launch a "Data Landscape Survey" to participants to gauge the research- and data-related skill and training needs of public library staff. This survey, completed by 33 workshop attendees, pointed to a "data equity" issue, highlighting differences across the state in a number of data-related skills and resources for library staff based on several factors. For purposes of this project, "data equity" refers to equitable access to data training and resources needed for professional work, regardless of geographic location, library size, or public library system. Building on these findings, Southwest Wisconsin Library System (SWLS) partnered with WiLS and DPI to expand the survey across the state and conduct additional research to develop a more holistic picture of public library data use across Wisconsin.

This expanded research helped to create a more robust picture of Wisconsin's library "data ecosystem." This included a look at the different parts of the ecosystem ranging from people to resources and how they intersect to highlight opportunities and obstacles in library data usage with a lens towards data equity. Researchers first considered how the data ecosystem currently functions before examining the role of equitable training, access, and resources for librarians in promoting effective and meaningful data use. With this information, researchers developed tailored recommendations on how to promote and support library-centric data use with an eye toward addressing obstacles while expanding opportunities.

Effective data use requires many different competencies and considerations that intersect in different ways. As part of preliminary research, five elements were identified as key contributors to data use for professional decision-making and shaped the project's data collection approach. These included:

1. **Data competence:** research and data skills typically obtained through avenues like formal academic training or professional development
2. **Data self-confidence:** a person's self-reported perception of their ability to use their research and data skills
3. **Access to research- and data-related resources:** includes software licenses, data dashboards, and relationships with mentors in the field
4. **Time and job-related demands:** organizational impacts on people's ability to spend time collecting and manipulating data into meaningful formats for decision-making
5. **General attitudes towards data:** how a staff member feels about data related to the profession, such as level of trust in data sets and other existing resources

## Methodology

The project involved a multi-tiered research approach utilizing a mixed-methods design. A planning team of different stakeholders from across the state ensured broad representation in the project. The team included:

- Melissa Aro, DPI
- Jennifer Bernetzke, SWLS
- Kim Kiesewetter, WiLS
- David Kranz, SWLS
- Melissa McLimans, WiLS
- Bruce Smith, DPI

The research design involved revising and expanding the Data Landscape Survey which was then sent out through a variety of channels across Wisconsin in Fall 2022. The survey included 38 primarily close-ended questions in an electronic format (see Appendix A). The survey was completed by 530 public library and public library system staff with representation from all 16 public library systems in the state (note that since the completion of the survey, two public library systems have merged into a single new system).

The survey results were analyzed and high-level findings helped to inform the creation of a focus group protocol (see Appendix B). With input from the planning team, focus group participants were identified and invited to participate along with targeted reach-outs to ensure a diverse representation of participants based on role, library size, geography, and personal interest in or confidence with data. In total, more than 30 public library and public library system staff participated in one of three focus groups held in early 2023. Each focus group was recorded, transcribed, and themed for analysis.

Together, the survey results and focus group themes served as the basis of the findings for this report. Collaborative analysis was done by the planning team to generate a list of high-level takeaways to inform recommendations and actionable next steps in support of the project goals.

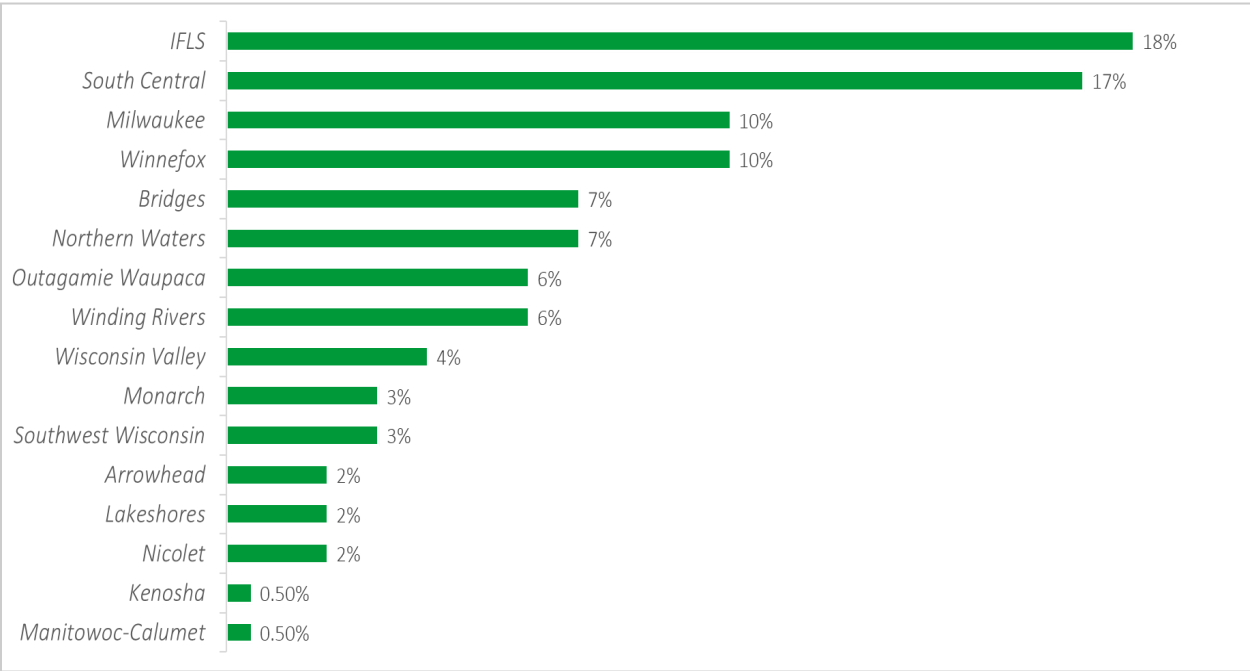
### Findings and Themes

The survey and focus group findings are differentiated below. As a mixed-methods research design, the quantitative nature of the survey was complemented by the qualitative data gathered through the focus groups.

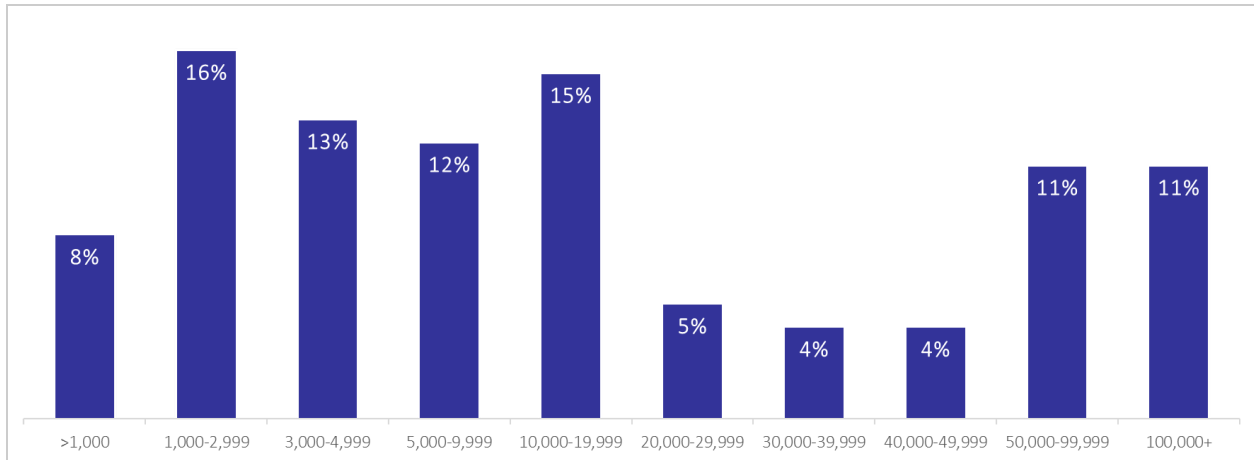
### Survey Findings

The survey was disseminated electronically across the state to public library and public library system staff in September 2022. The survey had excellent representation from across the state. In order to encourage people to answer freely and confidentially, respondents were *not* asked to disclose their place of employment. Instead, each respondent indicated which public library system they worked for, and public library staff members were also asked to provide the municipal population size served by their library and their library's [locale code](#). Each public library system was represented in the survey as well as all library locales and municipal population sizes. The goal of this representation was to ensure that data-related needs that might be influenced by the library size and location were accounted for during analysis.

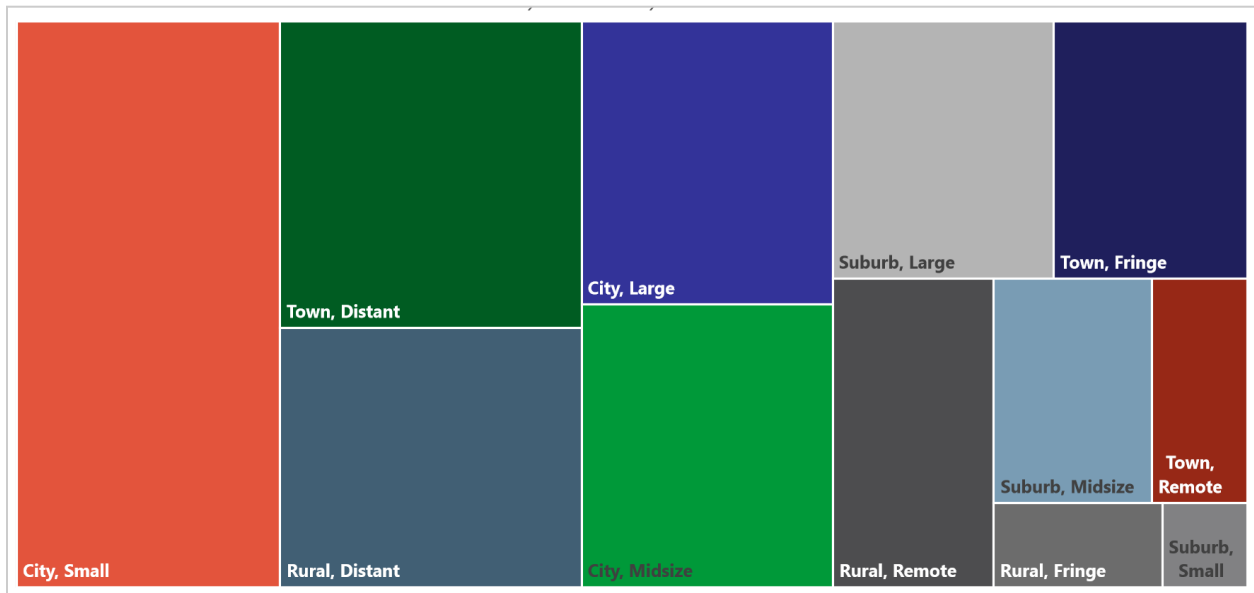
Survey Responses by Public Library System



Survey Responses by Municipal Population Size



Survey Responses by Library Local Code



These are the key takeaways about people’s experiences with library data across the state:

- Overwhelmingly, survey respondents (81%) **are using data on the job at least monthly**. Only 4% of respondents indicated they never used data professionally.
- The majority of this work is **data collection** (74%) followed by **creating data visualizations** (66%).
- Survey takers were asked to describe the reason or purpose behind their professional data use; the top two selected items were to **meet reporting requirements** like the Annual Report (61%) and to **facilitate collection development decision-making** (60%).

- The types of data people are accessing and using in professional library contexts are primarily coming from four different sources: **internal library data (e.g. incident reports, feedback forms, etc.), Annual Report data, US Census data, and OverDrive data.**
- When it comes to data analysis and visualization tools, the majority of people are using **free or low-cost and readily-accessible tools** like Microsoft Office products (Excel, PowerPoint, and Word), calculators, and Canva. Less than 10% of respondents indicated using licensed data software like Tableau, SPSS, nVivo, etc.

Survey respondents were asked to provide their self-reported confidence when performing different professional data-related activities like finding data, conducting data analysis, and creating data visualizations, in addition to a general “overall” data confidence level. One of the key findings related to overall data confidence was that a person’s data confidence was most highly impacted by having received academic training and/or professional development related to data. In other words, the more exposure to professional learning opportunities, the higher the survey taker's confidence.

*Self-Reported Confidence with Data Activities*

Data Activity	Professional Development		Academic Training		Professional Development + Academic Training	
	Yes	No	Yes	No	Both	Neither
Finding Data	3.32	2.79	3.32	2.63	3.46	2.58
Using Data	3.34	2.92	3.32	2.66	3.50	2.63
Analyzing Data	2.91	2.50	2.92	2.20	3.08	2.18
Visualizing Data	2.71	2.46	2.84	2.19	2.90	2.22
Overall Data Use	3.18	2.85	3.21	2.59	3.33	2.58

**Scale:** Very Little Confidence (1) to Very Confident (5)

For purposes of the survey, “academic training” covered any undergraduate or graduate coursework that included a research- or data-related component, while “professional development” included continuing education opportunities that involved research- and data-related content. While formal academic training remains a possible avenue for increasing public library staff's skills and confidence around professional data use, from a practical standpoint, professional development opportunities are a more cost-effective and accessible approach. Over 70% of survey respondents had no professional development or continuing education related to data and, of those people, 53% also had no formal academic training related to data work (37% of all survey takers). 41% of public library staff and 31% of public



library directors indicated they had neither professional development nor academic training related to data. Notably, library directors with no formal academic training and no continuing education related to data were much more likely (80%) to come from libraries serving municipal populations of under 10,000 residents, highlighting unique data support needs for libraries in smaller communities.



**37%** of survey respondents had no academic training or professional development around data

**79%** of people with no data training are using data on a daily, weekly, or monthly basis

Aside from data training, the biggest barriers to professional data use reported were a lack of time (63%) and a lack of expertise (59%). 63% of respondents indicated they had, at most, three hours per month to spend on data work in a professional context. This lack of time and expertise appears to drive library staff to make internal organizational connections with a “data person.” 78% of respondents indicated they had internal access to someone they viewed as a data mentor at their organization, even if this was an informal role. This finding was confirmed and expanded on during the focus group process where participants organically pointed to specific people at their library or library system as their go-to person for data-related questions and help. A single person serving in this role informally can create unique challenges from a staffing perspective. Of most concern is that when a “data person” leaves the organization it can have significant impacts on data processes and lead to a loss of institutional knowledge around data collection, use, and reporting.

### **Focus Group Findings**

Three focus groups were held in January 2023 with public library and public library system staff from across the state. Focus group participants were recruited via multiple approaches as a means to reach people using data in a variety of capacities and with different levels of formal training and self-reported confidence. Participants could select one of three focus groups and final attendee lists were developed with strategically-identified direct invitations to ensure representation from across the state. In total, 33 people participated in the focus groups. Focus groups were facilitated, recorded, transcribed, and themed for analysis by WiLS staff before sharing redacted transcripts and themes with the planning team for further review and analysis.

Building on the survey results, a number of themes emerged during the focus groups to help create a more holistic picture of public library staff’s data use and needs around data-related support, training, and resource access. Much of the qualitative data gathered during this

research phase confirmed and expanded on data gathered from the survey. The following are some key themes identified:

- Public library staff across all three focus groups indicated that the data they use related to their library included **circulation numbers, wireless internet uses, computer usage, library visits/door counter numbers, and programming data**. Directors were more likely to reference using **financial data and Annual Report data**.
- Library staff indicated that they are most interested in seeing their data in one of two ways; **trend data** related to different library metrics (e.g. circulation or library visits data over time); and **comparison data** of their library with similar libraries for benchmarking purposes.
- The most commonly cited reason for using library data was **to meet reporting requirements**, most often to fulfill Annual Report data requirements and provide library boards and city councils with pertinent library data updates. Another commonly cited process for data use was strategic plan development.
- Current professional library data use was reported as being driven most strongly and consistently by outside reporting requirements, creating the sense that **data is being collected and sent “up”** to someone at the board, municipality, and/or state level.

A strength of the focus group approach was that it revealed a clear sense of library staff’s needs, challenges, and desires around library data collection and use, especially when paired with the close-ended questions on the survey. A number of general challenges and strengths were identified during focus group analysis.

Challenges to professional library data use include...
Perceived lack of consistency in how certain library data elements are defined and collected, especially across platforms.
Lack of confidence on where to go for different library data-related needs, due to a lack of any single repository of information.
Discomfort with “negative” trends in data and fear that this could hurt library’s perception (especially related to funding) when being shared or reported to external stakeholders.
Deficit of data literacy skills around data analysis and visualization. People want to know, “Am I analyzing this data right?” and “How should I present this data in a visualized format?”
The impact of COVID on various data trends has created a lack of certainty in how to use 2020 and 2021 library data.
A general lack of time to dedicate to data learning.

## Strengths for professional library data use include...

The desire to learn more. Many of the focus group attendees want to continue to hone their skills around using data for storytelling, especially when advocating for their organization.

Many organizations have rich internal institutional knowledge that serves as a significant data asset. This usually takes the form of an organizational “data person” who either informally or formally assumes the role.

There is a desire to collaborate and learn from peers in the library world around data collection, use, and visualization.

A number of needs and desires were identified multiple times across multiple focus groups, indicating broad reach. These included:

- A single, largely exhaustive **repository of data resources** tailored to libraries so that people have a “one-stop shop” for data-related resources and tools and aren’t spending additional time looking at multiple sources and hunting down new information.
- **Opportunities to collaborate and learn** from peers around library data use.
- Access to **“plug-and-play” data resources** like dashboards and data templates as a foundation for data use across the state.
- Assistance in identifying statistically **meaningful peer comparisons for benchmarking** library data, especially Annual Report data.
- Real-life, **hands-on training opportunities**, most especially ones that allow participants to use their own library data.
- **“Inspirational” data** that provides people with creative, new ideas on how to use things like Annual Report data in different ways for decision-making, strategic planning, and advocacy.
- Access to **a more formalized “data person”** within each system. Not all libraries have access to a resource like this at their library and/or system.
- **Increased communication and transparency around Annual Report data.** Library directors, especially, indicated a desire to be more involved in the process and gain additional clarity about the variables being gathered and have the opportunity to revisit state-specific variables.
- **Specialized webinars or training opportunities** on key challenges, for example, how to use and view COVID data.
- **Access to timely data** for identifying trends, especially monthly and annual trends.

## Recommendations and Next Steps

A number of recommendations were identified based on emerging themes from the data collected during the research phase. At the heart of these recommendations is a clear need for tiered data support and resources. *All* libraries need a baseline of support to facilitate basic consistency in data use. From there, stakeholders have differing, additional needs in order to develop a fully-scoped data ecosystem for the state. This would result in minimal duplication of efforts and a baseline level of equitable access. In addition to individual public libraries and their staff, additional stakeholders involved in the statewide data ecosystem include public library systems, DPI, and outside library support organizations (e.g. WILS, WLA, etc.). Together, these entities contribute to a well-functioning and, most importantly, actionable pathway to library data use that moves beyond philosophical ideas about libraries and data and, instead, focuses on ensuring libraries have what they need to fully use and leverage the data they already have access to.

The findings outlined in this report point to the need for a statewide “Data for Library Action Pathway” (e.g. a pathway for *actionable* library data use). This pathway involves four tiers that build on each other starting at the broadest, foundational level and building towards higher-level needs, such as leadership skills to craft impactful data stories through an advocacy lens. While it is not necessarily a requirement for a person to move through each identified tier to “graduate” on to the next one, it is expected that beginning at Tier 1 and progressing chronologically through to the tier most aligned with a person’s professional role will create the most holistic foundation for people to engage in data-informed advocacy (Tier 4).



The four tiers identified are: **Library Data Awareness** → **Data Analysis and Tools** → **Reporting** → **Advocacy**.

## Tier 1: Library Data Awareness

The most foundational tier of the pathway is library data awareness. This tier involves, largely, an educational component that ensures library staff across the state working in a variety of roles have access to a baseline of information about different types of library-oriented data. This is important for a number of reasons:

- **equitable access to and usage of library data** regardless of library size and location
- **succession planning** to ensure continuity in data collection and use at the organizational level
- increased **confidence and trust** in certain types of library data and,
- the potential to develop a level of **consistency in certain library metrics and how they are used** to promote stronger statewide data sharing.

### *Recommended Tier 1 Activities*

*Data Ecosystem Activity:* A key aspect of this tier is providing foundational knowledge about library data to libraries. A suggested activity to accomplish this is the provision of resources to assist individual organizations in clearly identifying their organization's "data ecosystem." This can be a very simple activity that involves finding and documenting the different data being gathered and used at the organization and compiling into a single repository. This could include both internally collected data, as well as external data sources frequently used at the library such as Census and Annual Report data.

*Data Resource Repository:* A commonly-cited theme from the focus groups was a desire for some type of web-based repository for library data information, resources, and training opportunities. Library staff struggle to find library data resources and access to a single source such as a web page would alleviate the need to find and keep track of multiple resources and promote data equity by identifying a baseline of information easily available to all staff. A few states provide a similar repository for library staff; for example, [RAILS](#) (Illinois) has a curated list of data resources, as does the [State Library of North Carolina](#).

*Annual Report Training Session:* Throughout the focus groups, not all participants indicated confidence in their knowledge of the data being collected for the Annual Report. While DPI does publish a set of [Annual Report Instructions](#) that provides exhaustive descriptions of data points collected each year, it is not clear that public library directors and staff are accessing and reviewing this information, though library system directors were the most familiar with this resource. Due to staff's expressed concerns around understanding some Annual Report metrics, encouraging people to review this document is a first step to providing clarity about

why and how certain data points are included in the Annual Report. Since not all library staff need to be experts on this data, DPI might consider creating an asynchronous training, such as a recorded webinar, for all Wisconsin public library staff to have access to that provides the “basics” of the Annual Report and the information included in it. These multiple avenues of education could be a step towards creating more clarity and, ultimately, buy-in to the process of the Annual Report.

<b>Tier 1 : Library Data Awareness</b>	
<b>Objectives</b>	<p>Provide educational activities covering topics pertinent to public libraries such as Census data, Annual Report data, ILS data, and other data sources.</p> <p>Identify both the statewide and organizational-level data ecosystems through a variety of approaches such as webinars, resources, and the development of a data repository.</p> <p>Increase demonstrated awareness at the statewide level of who, broadly, is doing what with library data to ensure stakeholders across the state aren't duplicating efforts and know where to go for information and assistance.</p>
<b>Audience</b>	<p>Staff and directors at each public library and library system in the state.</p> <p>Stakeholders involved in public library data work such as DPI and library support organizations (e.g. WiLS, WLA, etc.).</p>
<b>Activities</b>	<p>Data Ecosystem Activity Resources (e.g. webinar or training session to provide resources for completing an internal data audit of a library's data ecosystem)</p> <p>Data Resource Repository (e.g., webpage housed by DPI or other statewide entity for a “one-stop shop” of library data resources)</p> <p>Annual Report Webinar/Training Session</p>
<b>Impact</b>	<p>Library staff across the state, in different roles and communities, will demonstrate a baseline level of awareness of different library data pertinent to their professional work.</p> <p>A statewide data ecosystem will be clearly identified and articulated to minimize the duplication of efforts and create clarity on where to go for different types of data-related resources.</p>

## Tier 2: Data Analysis and Tools

Once people have baseline knowledge about what data exists, where it lives, and its general purpose, the next tier considers how people might use it. In an ideal world, all the data library staff need would exist in a “plug and play” format; this is where dashboarding and templates can be beneficial. However, there will always be a need for select people to possess data analysis skills and have access to analysis tools in order to manipulate data both accurately and effectively to meet needs that aren’t met with templates. Based on the survey results, there is a clear preference for free or low-cost, easily-available tools such as calculators, Excel, PowerPoint, etc. This can provide a data-informed starting point for the types of training staff need, utilizing budget-friendly tools they already have access to. Developing this baseline level of knowledge and access is important for a number of reasons:

- It ensures library staff who work with data professionally have **access to the tools and skills they need to complete their jobs**. 49% of library staff who have no academic training and no professional development in data work indicated they were using data either daily or weekly as a part of their professional duties.
- It addresses the fact that there will be data-related needs that cannot be accounted for in dashboards and templates and will require **select people to possess higher-level data analysis skills**.

### *Recommended Tier 2 Activities*

*Data Analysis Training Opportunities:* Building on the survey and focus group findings, library staff would like access to training opportunities on how to accurately analyze data. A common challenge cited by staff was feeling a general lack of expertise around data analysis and fears that they aren’t analyzing data accurately. This mirrored the survey results that library staff’s overall self-reported confidence was below average when it comes to data analysis. Based on staff capacity challenges, it’s recommended that training opportunities offer both synchronous and asynchronous options and resources to allow for broad reach across the state. For example, a synchronous workshop on “Data Analysis in Excel” could be recorded and included in a data resource repository to ensure wide-reach and access, while also allowing people to review the tutorial repeatedly. Library staff also indicated they would be more interested in participating in training opportunities that allowed them to use their own library’s data. Recommended training topics include introductory statistics for library data (e.g. calculating means, understanding statistically significant differences, etc.) and basic data analysis in Excel (e.g. filtering and sorting data, using pivot tables, etc.).

*Data Resource Repository:* Building on the Tier 1 activity of a Data Resource Repository, Tier 2 activities and resources could also be available in this same web-based repository. Data analysis webinars, tutorials, and other documents would also be valuable to disseminate in a single “one-stop shop” for library data.

*Annual Report Dashboarding of Key Metrics:* DPI currently [publishes the Annual Report data](#) on their website each year in an Excel spreadsheet; this data is public and freely available for use. However, it is not clear how extensively it is being accessed by library staff and a common theme from the focus groups was a desire to have more of this data in a more shelf-ready format with ready-to-use visualizations. Most library staff appear to only need the data for basic visualizations of their own data over time (e.g. trend data) and for peer comparisons by benchmarking certain data points against other libraries. A simple dashboard providing commonly-used metrics would help improve the use of this data across the state by making it more easily accessible. In addition, providing inspirations for statistically sound and meaningful peer comparisons would be beneficial as library staff indicated they are not always sure how to identify and select the “right” comparisons to make across the state.

<b>Tier 2 : Data Analysis and Tools</b>	
<b>Objectives</b>	<p>Develop a repository of different analysis tools for libraries, including training opportunities, recorded tutorial videos, etc.</p> <p>Strategic investment in data analysis tools and resources to ensure libraries have access to the data regardless of the level of their statistical skills. Leveraging the statewide ecosystem will be of value here to reduce duplication of efforts and ensure there is tiered support that gives everyone from beginners to more advanced skill levels opportunities for growth.</p>
<b>Audience</b>	Each library needs access to a baseline of data analysis tools and people with knowledge of how to use them. A target starting point would be ensuring availability at each public library system in the state.
<b>Activities</b>	<p>Data Analysis Training Opportunities - webinars, workshops, asynchronous learning through recorded tutorials, etc.</p> <p>Data Resource Repository</p> <p>Annual Report Dashboard</p>
<b>Impact</b>	Each public library in the state has access to a known baseline of data analysis tools and resources to facilitate the development of increased data equity.



### **Tier 3: Reporting**

Building on the first two tiers, Tier 3 focuses on taking the awareness and data analysis skills learned and channeling them into the creation of effective reports. The most common way library staff are using data is to meet different reporting requirements (61% of survey takers). During the focus groups, library staff indicated that the majority of this reporting was being done both locally, at library board and city council meetings, as well as statewide for the completion of the Annual Report. A challenge in this realm overlaps with aspects of both Tier 1 (awareness) and Tier 2 (analysis) in that library staff experience a large part of their professional data use as providing information that goes “up” - in other words, libraries are providing data to stakeholders who require it from them, not necessarily because they can or are using it at the local library level. Because of this, there is a fear around some of this reporting and that sharing “negative” data (e.g. data trends that decrease over time, appear lower than peer comparisons, etc.) will hurt the library, especially when it comes to budgeting. Relatedly, there is a sense that some of the required data is outdated or not necessarily a fair representation of the library and how it functions. To that end, Tier 3 focuses on increasing library staff confidence in metrics that are commonly required by key stakeholders to meet reporting requirements and on providing training about how to use data collected for reporting more holistically.

#### *Recommended Tier 3 Activities*

*Statewide Data Working Group:* DPI is an ideal organization to develop a statewide data working group composed of different stakeholders involved in library data collection and use. At a minimum, public library staff indicated an interest in being more involved annually in reviewing the Annual Report, especially the state-specific metrics. Involving directors at both the system and public library level in this process could also have the added benefit of creating “evangelists” for the Annual Report who are confident in the process and data and could help continue to improve the use of this valuable data across the state. In addition, including stakeholders from other groups across the state could provide a clear avenue for reducing duplication of efforts by serving as a statewide connector between different entities.

*Data Reporting Templates:* Both Tier 1 and Tier 2 include recommended activities that involve Annual Report data with an eye towards first understanding Annual Report data and then, analyzing it through trends and benchmarking. For Tier 3, the emphasis is on using the Annual Report data more efficiently and effectively at the organizational level. The Annual Report includes a large amount of public library data that is being gathered across not just the state, but also the nation since the Annual Report in Wisconsin is the state’s adaptation of IMLS’ Public Libraries Survey, which is required to be conducted annually across the US. There are many powerful stories that can be crafted from this amount of data being gathered consistently

across the state and nation. In addition to Annual Report data, there are other common metrics library staff use to report to local boards and city councils, especially budgetary information. Providing more high quality data templates that highlight different ways to use library data at the local level (e.g. for space planning, collection development, considering annual hours open, etc.) could be a powerful avenue for empowering library staff to utilize this data more frequently and with increased confidence. This also lays the groundwork for Tier 4 advocacy efforts.

<b>Tier 3 : Reporting</b>	
<b>Objectives</b>	<p>Develop increased confidence in the library data available to public library staff for reporting purposes. This can include what data people have access to as well as improved articulation of ways the data can be used in reporting.</p> <p>Create a statewide Data Working Group to serve as a connector across different stakeholders involved in library data collection and use.</p>
<b>Audience</b>	<p>Library and system directors and staff doing the Annual Report or prepping board and city council reports.</p> <p>DPI</p> <p>Stakeholders involved in public library data work such library support organizations (e.g. WiLS, WLA, etc.).</p>
<b>Activities</b>	<p>Data Working Group</p> <p>Data Reporting Templates</p>
<b>Impact</b>	<p>Library directors and staff involved in data reporting activities will have increased knowledge and skills of different ways to leverage existing data effectively for creating impactful reports about their local library.</p> <p>A statewide Data Working Group will serve as a “library data connector” across the state to reduce duplication and better meet library data needs.</p>

#### **Tier 4: Advocacy and Data Story-Telling**

The final tier in the pathway focuses on something many library leaders are already engaged in: using data to advocate for their library. In an increasingly data-driven world, libraries are required to provide a variety of metrics about their organizations to different stakeholders for things like budgets, space planning, and grant writing. However, many people engaged in these activities are missing knowledge that would be gathered in Tiers 1-3 and feel unequipped to do

them effectively and accurately. The final step in this pathway is to channel all of that knowledge into meaningful and impactful data stories that can be used in a variety of contexts, including for purposes of advocacy. A key element in that is to increase people’s data visualization skills.

*Tier 4 Activities*

*Informal Data Collaboration Opportunities for Directors:* During the focus group phase of this project, many library and system directors indicated that a motivator for participating in the focus group process was to have the chance to learn and hear from peer libraries about how they are using data. Creating a space for interested library staff, especially directors, to share inspirations, ask questions, and provide peer learning opportunities would be of benefit. “Lunch bunch” virtual meetings, listservs, and other more informal spaces could meet this need and allow interested participants a low-stakes, low-cost way to learn from and collaborate with one another around library data use.

*Data Visualization Training Opportunities:* Like data analysis, self-reported confidence in creating data visualizations was below average; in fact, data visualization was the skill people felt the least confident about, even with relevant professional development and academic training. To that end, providing increased training opportunities for staff on what data visualizations are, how to create impactful visualizations, and how to use visualizations in data storytelling would bridge the gap between reporting and impactful data-driven advocacy. People reported using primarily free or low-cost tools for data visualizations, using programs like Microsoft PowerPoint and Word. These tools offer the capability of creating high-quality data visualizations without the purchase of additional licenses or tools.

*Data Dashboarding and Visualization Templates:* Building on previous tiers’ recommendations for more “plug-and-play” tools, access to additional templates with an eye towards advocacy could help library and system directors more effectively leverage existing data for advocacy purposes, while also saving time. This can be achieved through the creation of easily branded templates of high-quality data visualizations that utilize current best practices.

<b>Tier 4 : Advocacy</b>	
<b>Objectives</b>	Provide high quality, brandable templates, infographics, and/or dashboards that can be used as a starting point for common topics library and system directors need to advocate for (e.g. space planning, COVID-related advocacy, etc.).

	Offer data training opportunities on current best practices in the field of data visualization and how to use data for organizational storytelling and advocacy to outside stakeholders.
<b>Audience</b>	Library and system directors and staff  Key library staff
<b>Activities</b>	Informal Data Collaboration Opportunities (e.g. listserv)  Data Visualization Training Opportunities  Data Dashboarding and Data Visualization Templates
<b>Impact</b>	Library staff engaged in public library advocacy will have access to a variety of high-quality learning and collaboration opportunities on data visualizations and how to effectively use data for organizational storytelling.

**Conclusion**

Across the state of Wisconsin, public library and public library system directors and staff are engaged daily in professional work that requires them to use data in a variety of ways. However, many of these same people have not ever received any professional or academic training in data, creating gaps in knowledge and contributing to a general lack of confidence around data use. It is of note that these staff members are much more likely to be working in libraries serving municipal populations of under 10,000, indicating a data equity challenge where individuals with more data training and skills are more likely to be in libraries serving larger communities across the state.

Based on the survey and focus groups, professional development is highly correlated to increased confidence around using data in a variety of ways and is a mechanism for promoting data equity. The development of a pathway to actionable data use will allow different stakeholders to come together to:

- **Improve data competence** by creating an articulated baseline level of data knowledge and access to related data resources across all libraries, regardless of size and location.
- **Increase data self-confidence** through the provision of training that mirrors actual needs and addresses gaps in knowledge to meet professional job expectations around data use.

- **Ensure equitable access to a baseline of research- and data-related resources** across the state's data ecosystem with an eye towards system-level equity (e.g. ensuring each system has knowledge of and access to a shared baseline).
- **Reduce time- and job-related barriers** that make data learning and use challenging by decreasing the amount of time people spend looking for data resources through the creation of a streamlined, tiered approach to data use that matches people to training and resources that relate to their professional duties.
- **Improve general attitudes around data** by providing opportunities to increase understanding of and involvement with the data that exists, the data they collect, and the data they use in library reporting and advocacy.
- **Reduce duplication of efforts and/or gaps in offerings** by bringing different stakeholders involved in library data use together to more effectively strengthen the statewide data ecosystem.

## Appendices

### Appendix A: Survey Instrument

#### Academic and Professional Background and Training

- What is the highest level of education you have completed?
  - Some high school (didn't graduate/receive equivalency degree)
  - High school graduate or GED
  - Some college
  - Associate's degree
  - Bachelor's degree
  - Graduate or professional degree
- Do you have a degree in library and/or information science?
  - Yes
  - No
- Have you completed any academic coursework in research methods and/or data collection and analysis?
  - Yes
  - No
  - Unsure
- If you answered yes to the previous question, please describe what type of academic coursework you took:
  - Undergraduate course that included a research/data component
  - Graduate course that included a research/data component
  - Other (Please specify:)
  - Not Applicable
- Have you ever completed any continuing education or professional development in research and/or data?
  - Yes
  - No
  - Unsure
- If you answered yes to the previous question, please describe what type of continuing education or professional development you received:
- Which public library system do you work for/in?
- How long have you been at your current institution/organization?

- >1 year
- 1 year
- 2 years
- 3 years
- 4 years
- 5-9 years
- 10+ years
- Which best describes your current role?
  - Public Library Director
  - Public Library Staff
  - Public Library System Director
  - Public Library System Staff
  - Other (Please specify:)

**Public Library Questions (for Public Library Directors and Staff ONLY)**

- My organization services the following (municipal) size:
  - >1,000
  - 1,000-2,999
  - 3,000-4,999
  - 5,000-9,999
  - 10,000-19,999
  - 20,000-29,999
  - 30,000-39,999
  - 40,000-49,999
  - 50,000-99,999
  - 100,000+
- What is your library's locale code?
  - City, Large
  - City, Midsize
  - City, Small
  - Suburb, Large
  - Suburb, Midsize,
  - Suburb, Small
  - Town, Fringe
  - Town, Distant,

- Town, Remote
- Rural, Fringe
- Rural, Distant
- Rural, Remote

### **Finding, Using, and Collecting Data**

- How often do you personally use data as a part of your job duties in your current position?
  - Daily
  - Weekly
  - 1-2 times a month
  - 3-6 times a year
  - Hardly ever (less than 3 times a year)
  - Never
- Please describe in what ways you use data as part of your job duties: (Check all that apply.)
  - Reporting to stakeholders/boards
  - Decision-making related to collection development
  - Decision-making related to space and/or services
  - Decision-making related to budget and/or personnel choices
  - Advocating for my library/library system
  - Identifying trends over time
  - Telling stories/reporting to the public
  - Out of interest/enjoyment
  - Meeting reporting requirement (e.g. Annual Report data submission, grant-related data requirements, etc.)
- Which of these existing data sources have ever been provided to you from someone else for professional or academic/learning/training purposes? (Check all that apply.)
  - IMLS Public Library Data
  - DPI Annual Report Data
  - US Census Data
  - ILS Data
  - OverDrive
  - Data collected at your library or organization



- None
- Other (Please specify:)
- Which of these existing data sources have you ever accessed yourself to look at or use (e.g. not been given them from another source like a colleague, a professor, a consultant, etc.)? (Check all that apply.)
  - IMLS Public Library Data
  - DPI Annual Report Data
  - US Census Data
  - ILS Data
  - OverDrive
  - Data collected at your library or organization
  - None
  - Other (Please specify:)
- Have you ever used any library or demographic-oriented data dashboards before? “Data dashboard” in this context refers to any platform that offers data in a visualized format like a chart or graph that is dynamic in nature.
  - Yes
  - No
  - Unsure
- Have you ever used any library or demographic-oriented data templates or infographics before? “Data templates or infographics” in this context refers to any resource that offers data in a static, visualized format like those that can be downloaded from LibPAS.
  - Yes
  - No
  - Unsure
- If you answered yes to one/both of the previous two questions, please describe (examples might include demographic data, system-provided data dashboards, etc.):
- Have you ever collected data as a part of your current job duties? This includes conducting a poll or survey, hosting a focus group or community conversation, etc.
  - Yes
  - No
  - Unsure
- How would you rate your confidence finding existing data sources to support your

professional work?

- Very little confidence
  - Some confidence
  - Average confidence
  - Above-average confidence
  - Very confident
- How would you rate your confidence using existing data sources to support your professional work?
    - Very little confidence
    - Some confidence
    - Average confidence
    - Above-average confidence
    - Very confident

### **Data Analysis Background**

- Have you ever conducted data analysis before?
  - Yes
  - No
  - Unsure
- Was this analysis quantitative or qualitative?
  - Quantitative
  - Qualitative
  - Both
  - None
  - Unsure
- What tool(s) have you used to conduct data analysis? (Check all that apply.)
  - Excel
  - SPSS
  - R
  - Calculator
  - Word
  - PowerPoint
  - Data Studio
  - Tableau
  - Power BI

- Atlas.ti
- nVivo
- Not Applicable/None
- Other (Please specify:)
- How would you rate your confidence analyzing datasets related to your work?
  - Very little confidence
  - Some confidence
  - Average confidence
  - Above-average confidence
  - Very confident

### **Data Visualization Background**

- Have you ever created any data visualizations? "Data visualizations" refers to any charts, graphs, or other visual depictions of data to make them easier to understand and picture for a broad audience.
  - Yes
  - No
  - Unsure
- What tool(s) have you used to create data visualizations? (Check all that apply.)
  - Excel
  - SPSS
  - R
  - Word
  - PowerPoint
  - Data Studio
  - Tableau
  - Power BI
  - Canva
  - Piktochart
  - Not Applicable/None
  - Other (Please specify:)
- How would you rate your confidence creating data visualizations?
  - Very little confidence
  - Some confidence
  - Average confidence

- Above-average confidence
- Very confident

### **Data Resources**

- What is your overall confidence finding and using data through the course of your professional work?
  - Very little confidence
  - Some confidence
  - Average confidence
  - Above-average confidence
  - Very confident
- How many hours per month do you currently have to spend on data work through the course of your professional position?
  - None
  - 1-3 hours
  - 4-7 hours
  - 8-10 hours
  - 11+ hours
- Do you have access to someone in your organization as a resource for questions/ help, and/or support finding and using data in a professional context (e.g. not for school)?
  - Yes
  - No
- Do you have access to someone outside your organization as a resource for questions/ help, and/or support finding and using data in a professional context (e.g. not for school)?
  - Yes
  - No
- What do you personally view as challenges and barriers to collecting, sharing, and/or using data? (Check all that apply.)
  - Lack of expertise
  - Lack of time
  - Supervisor/administration does not prioritize this work
  - Don't know where to begin
  - Don't think it's helpful

- Don't know where to find the data I need
- Concerns about sharing related to privacy
- Don't believe data skills are a part of my position
- Other (Please specify:)
- Where do you go for resources and/or training on research and data? (Check all that apply.)
  - Colleagues
  - Mentors
  - My organization
  - Library system
  - DPI
  - Professional membership organization
  - College or university
  - Open source online trainings like Khan Academy
  - Paid online trainings like Coursera
  - Other (Please specify:)
- Please rate how important the following items are to you in relation to your current position. (Scale: Not or barely important/A little important/Somewhat important/Important/Extremely Important)
  - Understanding and using data.
  - Providing your board and other stakeholders with data to support decision making at the organizational level.
  - Access to timely data in support of telling your library or organization's story.

## Appendix B: Focus Group Protocol

### Focus Group A: Organizational Data Use and Collaboration (Leadership Role) Focus

1. What does library data use look like for you?
2. What type of data sets do you use/access for professional purposes and how frequently are you accessing them?
  - a. Do you like or dislike how the data is presented (e.g. understand how to find the information you're looking for, ease of finding data, like the interface, etc.)? [Probe if dislike: What would improve your experience with that dataset?]

3. What are examples of data points/metrics you review/use frequently in your work?
4. What audience(s) are you communicating data to and how frequently? This includes both internally and externally to your organization.
5. What are your biggest assets or resources when it comes to data use? What are your biggest challenges?
6. Are there resources or skills you wish you had related to data? If so, what are they?
7. You indicated on the Focus Group Planning Survey that you use data primarily for organizational planning, evaluation, and decision making. Can you describe in more detail what this looks like for you personally? [Probe: Can you provide a specific example of a time you used data in this context?]
8. What does data use look like for you across your organization? [Probe: For example, do you have staff roles dedicated to data use? What does data collection, organization, analysis, reporting look like, etc.?)]
9. In what ways and around what topics would collaboration about data use with peers be meaningful and helpful for you?
  - a. [Probe if needed: In what contexts? (e.g. working groups, listserv, annual meeting, etc.)]

### **Focus Group B: Data Training Focus**

1. What does library data use look like for you?
2. What type of data sets do you use/access for professional purposes and how frequently?
  - a. Do you like or dislike how the data is presented (e.g. understand how to find the information you're looking for, ease of finding data, like the interface, etc.)? [Probe if dislike: What would improve your experience with that dataset?]
3. What are examples of data points/metrics you review/use frequently in your work?
4. What audience(s) are you communicating data to and how frequently? This includes both internally and externally to your organization.
5. What are your biggest assets or resources when it comes to data use? What are your biggest challenges?
6. Are there resources or skills you wish you had related to data? If so, what are they?

7. When thinking about your indicated interest in higher level data knowledge and expertise, are there specific topics or areas of interest or topics you can think of that library staff across the state would like to/need to learn more about?
8. What mode of data training would be most appealing to you and work best with your professional duties? [Probe: Virtual, in-person, asynchronous, etc.]
9. How frequently do you envision data training tailored to your needs being available to you? For example, would you like to have consistent, ongoing support from a person/organization throughout the year (e.g. a data consultant), would you like to have semi-regular training opportunities (e.g., twice a year), would you like a repository of asynchronous training resources and opportunities, or....?

### **Focus Group C: Data Resources Focus**

1. What does library data use look like for you?
2. What type of data sets do you use/access for professional purposes and how frequently?
  - a. Do you like or dislike how the data is presented (e.g. understand how to find the information you're looking for, ease of finding data, like the interface, etc.)? [Probe if dislike: What would improve your experience with that dataset?]
3. What are examples of data points/metrics you review/use frequently in your work?
4. What audience(s) are you communicating data to and how frequently? This includes both internally and externally to your organization.
5. What are your biggest assets or resources when it comes to data use? What are your biggest challenges?
6. Are there resources or skills you wish you had related to data? If so, what are they?
7. From the survey results, the top two barriers for data use across the board were a lack of time and a lack of expertise. When thinking of the type of "plug-and-play" data resources you could use professionally, what kind of resources come to mind that would save you time and also feel accessible to you from a skills standpoint?
  - a. [Probe to specific options if they aren't all covered naturally to gauge interest and need - data templates, data dashboards, data repositories... what type of data they would like to see included, what format/platform, etc.]

8. Building on the type of plug-and-play data resources you would like to have professionally, what specific data would you like to have available for visualization? Are there differences between what types of data you use and how you would like to have it visualized for different contexts? Just for one example, maybe there's internal data you would like in a dashboard, but specific templates you might like to have for external data sharing.





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