EPA National Library Network User Needs Survey

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PREFACE

This report, which was written by the Library of Congress's Federal Research Division (FRD) on behalf of the U.S. Environmental Protection Agency's (EPA's) National Library Network, provides a review of the responses to the EPA National Library Network User Needs Survey. This survey was administered by FRD through the SurveyMonkey platform between October 16, 2017, and November 17, 2017.

The survey's intent was to gain some understanding of the EPA library patrons' information consumption and gauge their opinions on various current and potential services. The following report provides summary information about the survey methodology, as well as data—both graphic- and text-based—on the responses.

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SURVEY METHODOLOGY

In 2017, the U.S. Environmental Protection Agency's (EPA's) National Library Network—hereafter EPA libraries—partnered with the Library of Congress's Federal Research Division (FRD) to survey the libraries' patrons to measure their opinions of the network's current services, as well as potential services it could offer in the future. As part of these twin objectives, the EPA libraries also wanted the survey to provide insight into the patrons' information consumption, such as the resources they frequently used for work and the resources they found most effective for their research needs.

Survey Form

The survey questions were drawn from an earlier patron survey that the EPA libraries had commissioned as they wanted to understand if and how the patrons' opinions had changed over time. That prior survey was one component of a research project that was completed in August 2009, which supplemented the survey's quantitative data with findings from focus groups and interviews.

It should be noted, however, that the findings from the present survey are not comparable to those from the previous iteration due to differences in the survey form and sampling methods. The present survey retained many, though not all, of the questions and corresponding answer choices used in the previous survey, some questions and answer options were revised, and the order in which the questions appeared on the two surveys was also different. FRD researchers recommended these changes based on feedback from test respondents and findings from research publications on survey design; EPA library officials accepted these revisions.

Survey Sample

The individuals whom FRD contacted to participate in the survey were all EPA library patrons, and most were EPA employees, contractors, grantees, or interns (the survey asked participants about their employment status at EPA; the results are in question 22 [pp. 31–32, 77]). EPA library representatives compiled and provided to FRD a list of nearly 4,000 EPA library patrons, which included their first and last names, email addresses, and associated library branch locations. After checking for duplicate names and valid contact information, EPA and FRD found that 3,650 individuals on the list were employed at EPA and had a valid email address at which they could be contacted for the survey. These 3,650 patrons comprise the survey's sampling frame, which is the population from which a sample of individuals can be selected for participation.

On October 16, 2017, FRD sent an emailed survey invitation to a sample of 696 patrons from the sampling frame via the SurveyMonkey platform. FRD subsequently sent six reminder emails through SurveyMonkey to non-respondents (see appendix I [pg. 36]). The survey closed on November 17, 2017. The survey form that FRD used is included in appendix II (pp. 37–61).

The survey sample size of 696 is based on the number of EPA library patrons needed to get a margin of error of +/- 5 percent with a 95 percent level of confidence. More specifically, with a sample frame of 3,650 patrons, 348 individuals would need to respond for the survey to meet

this threshold (see [appendix IV](#) [pp. 81–84] for sample size calculations). Based on the assumption that not all individuals would respond to the survey, FRD doubled the required number of respondents in the hope that 348 persons (i.e., half of those contacted) would reply.[1]

Sampling Method

To minimize the impact of non-response on the survey findings, FRD used two statistical techniques, one before sending the survey and another after receiving the responses. Prior to sending the survey, FRD used a probability sampling method called stratified sampling to create the sample of 696 persons. Broadly described, this method involves dividing a sample frame into mutually exclusive groups (called strata) that reflect some prior known distinction of the survey population (e.g., age, gender, geographic location) and then conducting a random sample from each group (or stratum). The only known distinction for the individuals who could participate in this survey was the EPA branch library they patronized; thus the 24 EPA library locations served as the strata used to create the sample. For reasons that will be discussed later in the text, the survey response rates led FRD to combine the responses from patrons associated with nine library locations into a single stratum after the survey's completion.

The reasons for employing stratified sampling to address the problems associated with non-response relate to the ways in which strata sizes can be used to adjust the data to help the results better represent the entire sample. For example, if a survey population has 1,600 patrons from Library A and 400 patrons from Library B, and the stratified sample includes 200 patrons from each library, then a single patron from Library A is counted as 8 persons (1600/200), while each patron from Library B is counted as 2 persons (400/200). In turn, the responses from Library A patrons are multiplied—or weighted—by 8, and Library B patrons' responses are multiplied by 2.

The type of stratification design that FRD used to construct the sample was a proportional allocation. In this design, the 3,650 EPA patrons in the sampling frame were divided into different groups based on their affiliated EPA library. The number of patrons per library varied substantially from 803 for the Research Triangle Park (RTP) Library to eight patrons for the Fort Meade Library. In the sample, the number of patrons randomly chosen from each library was proportional to the number of each library's patrons in the overall population, with some modifications that are described below.

To illustrate the proportional allocation stratification design, the 803 patrons from the RTP location comprise 22 percent of the total population (3,650 persons). Thus, 22 percent of the 696 patrons (153 persons) in the sample would be randomly selected from the RTP patrons. Likewise, as eight patrons from Fort Meade constitute 0.2 percent of the overall population, 0.2 percent of the sample (1.4 persons) would be randomly selected from the Fort Meade patrons.

To further address potential non-response bias, FRD modified the number of patrons from each library, an allowable statistical practice. Instead of randomly selecting one of the eight patrons

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[1] Statistical practice allows for adjustments to be made to sample sizes in order to obtain a statistically determined number of responses. See Sharon L. Lohr, *Sampling: Design and Analysis,* 2nd ed. (Boston: Brooks/Cole), 5, 29, 46–50.

from Fort Meade, for example, FRD sent survey notifications to four patrons, assuming that 50 percent (i.e., two of the four) would respond. After similar increases to the number of patrons selected from other small strata, the number of patrons randomly selected from the RTP library stratum was reduced from 153 to 145 (i.e., 21 percent of the 696 patron sample).

Post-Survey Methods of Addressing Non-Response

The survey had a non-response rate of 63.2 percent, higher than the researchers and EPA library officials had hoped for. Just as non-probability sampling can introduce bias into the survey samples, non-response from the individuals selected as part of a probability sample can introduce bias into the statistical calculations based on the responses. Whereas the kind of bias possible from non-probability samples is selection bias, non-response bias is due to a lack of responses from some portion of the individuals selected for participation. Non-response bias is well documented as a frequent feature of surveys, and there is widespread acknowledgement that non-response can introduce bias into survey results. However, the extent to which non-response bias affects these results remains a topic of research and debate.[2]

Scholars and practitioners generally posit that the best methods of addressing non-response are executed prior to and during the survey, such as designing surveys to entice maximum response rates and re-contacting individuals who have not yet responded. Other methods to reduce non-response bias can be employed after the survey results are collected, but these use data from survey respondents, whom research has shown differ from non-respondents in critical ways.[3]

In order to determine the feasibility of using a post-survey method to address non-response bias, FRD first determined if non-responses were associated with the responses or questions, or if the responses were missing at random.[4] The statistical test commonly used to estimate such an association has mathematical requirements that necessitated the combination of responses from nine library locations into a single stratum. The results of the analysis indicated no pattern in the missing responses.

Given this finding, FRD used a weighting-class method to adjust the data from responses to compensate for non-respondents. This method estimates a response probability for the groups that comprise the samples, such as the strata into which the library patrons were grouped. Those estimated probabilities are combined with the weights of the stratified sample.[5] The researchers' calculations for weighting-class adjustments are contained in appendix IV (pp. 81–84).

OVERALL SURVEY RESPONSE RATE

According to figures automatically generated by SurveyMonkey, 50.7 percent of the individuals who comprised the sample opened the survey, 43.1 percent clicked through the provided link to

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[2] Floyd J. Fowler, Jr., *Survey Research Methods* (Los Angeles: Sage, 2014), 47–48; Tom W. Smith, "Developing Nonresponse Standards," in *Survey Response*, ed. Robert M Groves et al. (New York: John Wiley and Sons, 2002), 27–40; Edith de Leeuw and Wim de Heer, "Trends in Household Survey Nonresponse: A Longitudinal and International Comparison," in *Survey Response*, ed. Robert M. Groves et al. (New York: John Wiley and Sons, 2002), 41–54.
[3] Lohr, *Sampling*, 329–338; Fowler, *Survey Research Methods*, 43–49.
[4] Lohr, *Sampling*, 339.
[5] Lohr, *Sampling*, 340–341.

open the survey on the web, and 40.8 percent completed at least one question. In addition, 12 individuals requested that SurveyMonkey no longer contact them (i.e., these individuals opted out of this and all other surveys conducted through SurveyMonkey).

Most respondents completed 75 percent or more of all but five questions, which were optional in nature. These five questions asked respondents to provide feedback in a free-form textbox. By contrast, the other 19 questions in the survey required respondents to choose from among a predefined response set.

The percentages of respondents who answered the 24 survey questions are shown in figure 1, with the optional questions distinguished by grey-colored bars.

Figure 1. Survey Response Rate by Question Number
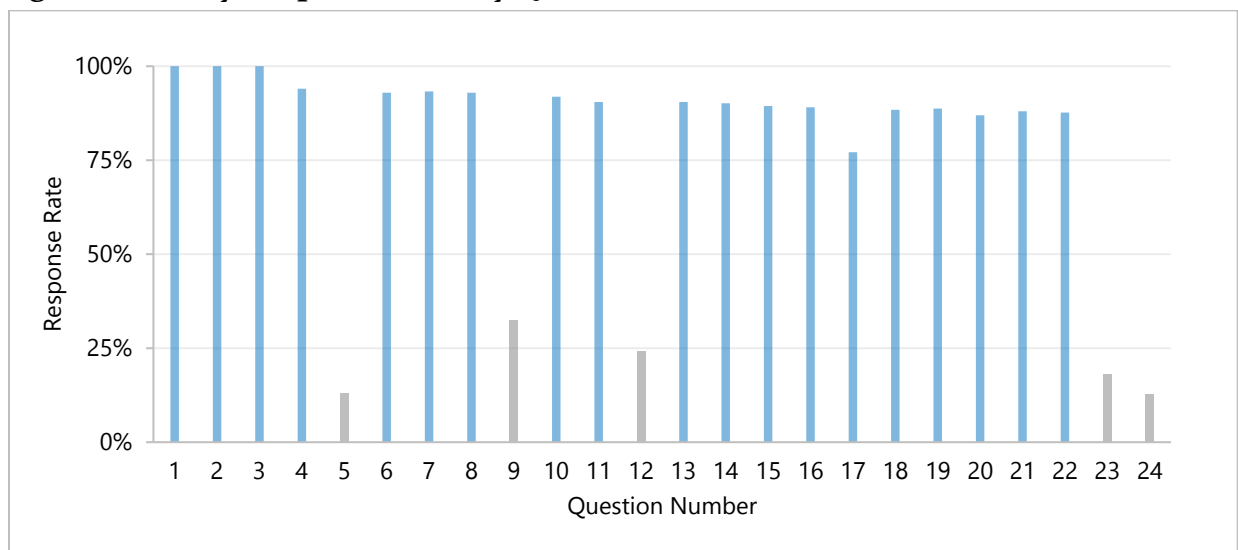
For this survey, the estimation of the response rate is based on the proportion of individuals who completed the 19 mandatory questions offering predefined answers, with respondents defined as those completing at least 50 percent of the questions, a proportion that is in line with guidance from the American Association for Public Opinion Research.[6] The optional free-form questions were not counted toward the response rate.

Of the 696 individuals in the sample, 256 responded to 50 percent or more of the 19 mandatory questions, rendering a survey response rate of 36.8 percent. These respondents comprise 253 individuals who responded to 75 percent or more of the 19 questions, and 3 persons who responded to 50–75 percent of the questions. An additional 28 individuals responded to the survey, but they are categorized as non-respondents because they completed less than 50 percent of the mandatory questions.

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[6] American Association for Public Opinion Research (AAPOR), *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*, 9th ed. (Oakbrook Terrace, IL: AAPOR, 2016), 15, http://www.aapor.org/AAPOR_Main/media/publications/Standard-Definitions20169theditionfinal.pdf.

The numbers of respondents and non-respondents are depicted in figure 2, with respondents disaggregated by the proportion of questions completed. A grey line shows the composition of the 256 respondents who answered 50 percent or more of the 19 questions and who, therefore, constitute the respondents of this survey.

Figure 2. Survey Response Rate by Percentage of Questions Answered
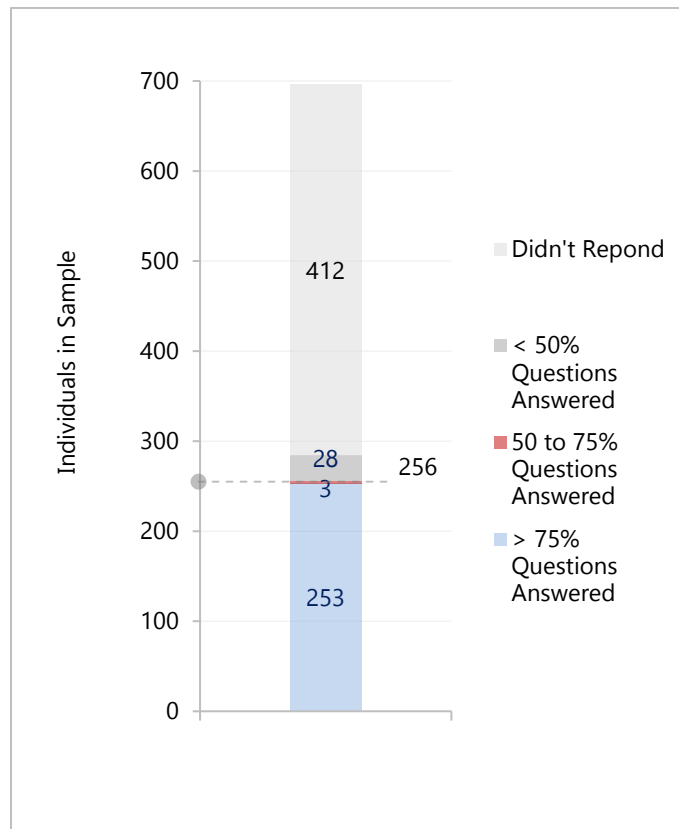
SURVEY RESPONSE RATE BY LIBRARY

The number of patrons who responded to the survey varied by library location. The numbers of respondents from each library who answered 50 percent or more of the 19 survey questions are listed in table 1, alongside the number of non-respondents. Table 1 also contains the number of patrons from each library that constituted both the sample frame and sample.

Table 1. Survey Response Rate by Library

Library	Sample Frame	Sample	No. of Respondents	No. of Non-Respondents	Response Rate
Ada	18	5	3	2	60.0%
Ann Arbor	230	44	13	31	29.5%
Athens	19	5	3	2	60.0%
Cincinnati	214	40	16	24	40.0%
Corvallis	50	10	4	6	40.0%

Library	Sample Frame	Sample	No. of Respondents	No. of Non-Respondents	Response Rate
Duluth	52	10	6	4	60.0%
Ft. Meade	8	4	0	4	0.0%
Gulf Breeze	40	8	2	6	25.0%
Headquarters	253	48	20	28	41.7%
Las Vegas	11	4	2	2	50.0%
Narragansett	64	12	8	4	66.7%
NEIC	42	8	6	2	75.0%
OGC	19	5	2	3	40.0%
Region 1	152	29	9	20	31.0%
Region 2	151	29	13	16	44.8%
Region 3	304	58	22	36	37.9%
Region 4	146	28	14	14	50.0%
Region 5	309	58	19	39	32.8%
Region 6	100	19	5	14	26.3%
Region 7	103	20	4	16	20.0%
Region 8	205	39	17	22	43.6%
Region 9	285	54	23	31	42.6%
Region 10	72	14	8	6	57.1%
RTP	803	145	37	108	25.5%

The numbers of respondents and non-respondents for each EPA library are also depicted in figure 3.

Figure 3. Survey Responses and Non-Responses by Library
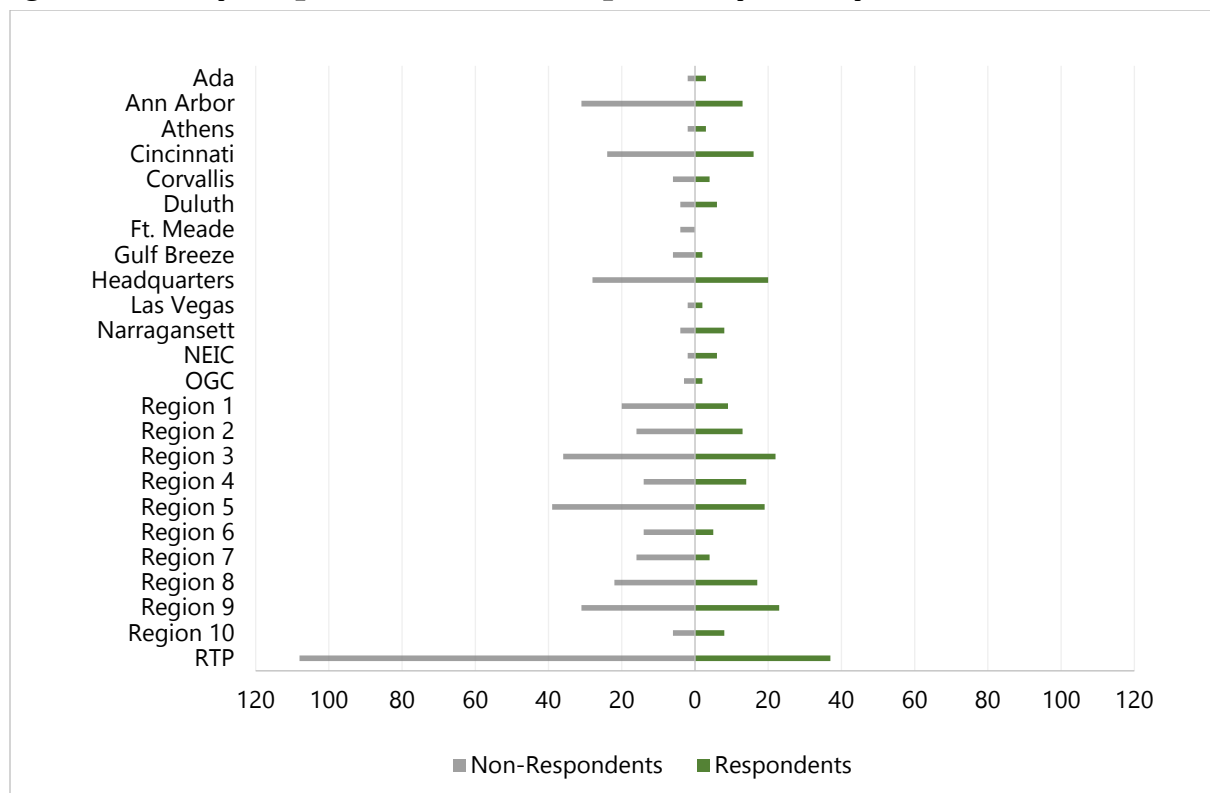
SURVEY RESPONSES

This section contains the survey responses for each of the 19 mandatory questions, and highlights the percentages of patrons who chose each predefined answer in a dedicated table and graph. The responses to the five optional questions, as well as free-form text submissions, are included in appendix III (pp. 62–80).

It is important to note that the percentages in these tables and graphs are estimates of the proportion of the overall population of EPA library patrons in the sample frame who hold opinions about the topics posed in the questions. These percentages are estimates because they are based on a sample of the population and because the percentages do not always sum to 100 percent, which is due to both rounding and non-response.

Many of the questions prompted respondents to assess several things and in most of the tables and graphs throughout this paper, those answer choices have been sorted from those reflecting the most positive response to those reflecting the most negative. This was done for ease of reading and interpretation of the findings.

Question 1. Frequency with which Patrons Access an EPA Library

> Question Text: "Please indicate how often you access an EPA library (including in person, by telephone, by email, via the web, or live chat) to obtain information."

Broadly described, the survey responses indicate that EPA library patrons are frequent or moderately frequent users of their libraries. More specifically, the responses indicate that around half visit or otherwise use their library either monthly or quarterly. Nearly one-third access their library once per week or more while around one-fifth of the patrons are infrequent library users, accessing their library once or twice annually (see table 2).

Table 2. Question 1 Responses

Daily	Several times a week	Weekly	Monthly	Every three months	Every six months	Once a year	No answer
4.5%	12.6%	17.6%	31.8%	20.7%	8.7%	11.4%	4.1%

The frequencies with which the patrons use their EPA library are, perhaps, even more apparent in figure 4, which shows that the majority use their library somewhere between once per week and once per quarter.

Figure 4. Question 1 Responses
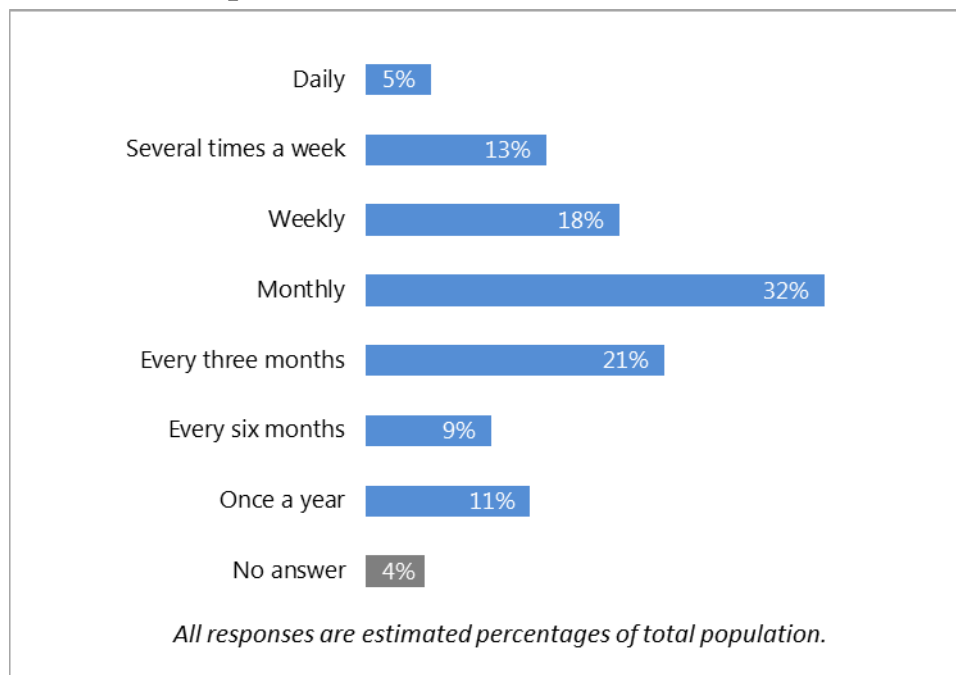
Daily 5%
Several times a week 13%
Weekly 18%
Monthly 32%
Every three months 21%
Every six months 9%
Once a year 11%
No answer 4%

All responses are estimated percentages of total population.

Question 2. Ways Patrons Learn about EPA Library Services

Question Text: "Please indicate which of the following you use to learn about EPA library services. Please check all that apply."

The survey asked the patrons about the ways in which they learn about the services available from their EPA library, allowing them to choose from one or more options and to write something of their own choosing. The responses indicate that most patrons discover their library's services from the library intranet or as a result of a personal visit (73 percent and 61 percent, respectively; see table 3). Around one-third of the patrons discover library services through word-of-mouth, various outreach methods (e.g., emails, posters, etc.), or trainings offered by their library. The least chosen method through which patrons discover library services are from library orientations, open houses, and tours.

Around one-tenth of the respondents selected "other" and submitted free-form answers that indicated they discovered the libraries' services through some form of contact with a librarian, such as a phone call, email, or in-person discussion. These responses are included in table 21 (pg. 62) in appendix III.

Table 3. Question 2 Responses

Library Intranet site	Visits to the library (not including orientations, and open houses)	Word of mouth	Local/regional EPA library brochures, emails, flyers, handouts, newsletters, and posters	Training events/ sessions	Library tours, orientations, and open houses	Other (please specify)
72.5%	60.6%	35.5%	34.7%	31.8%	19.3%	9.3%

These responses are consistent with subsequent questions in the survey. More specifically, the low proportion of patrons who learn about library services from library-hosted training events and sessions (32 percent, see fig. 5) is coupled with nearly half of the patrons having no opinion about the availability and effectiveness of such trainings, as identified in question 3. This suggests that a minority of patrons learn about library services from library training sessions because a near-majority of them are unaware of those trainings in the first place.

Figure 5. Question 2 Responses
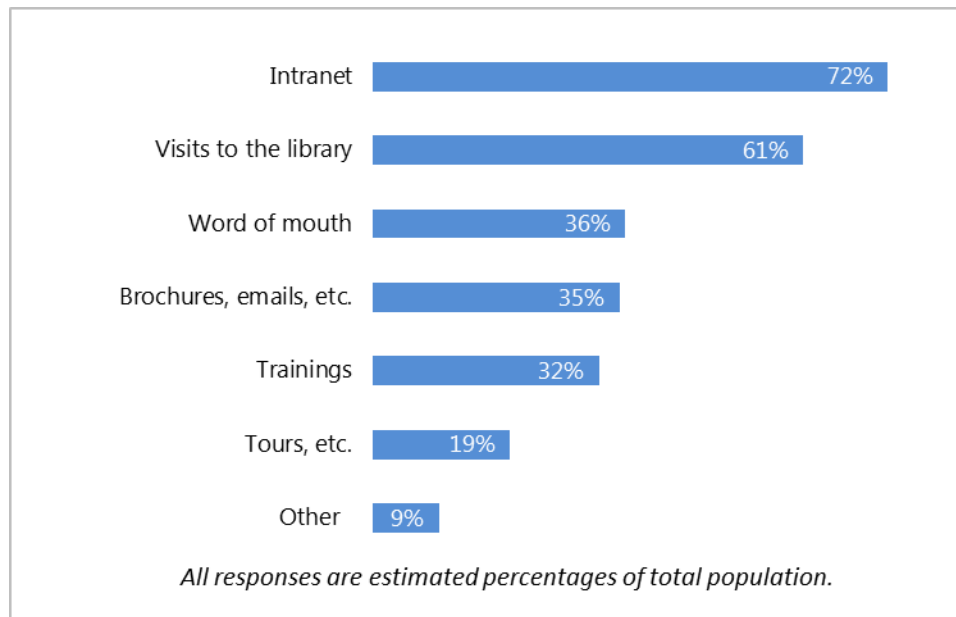
All responses are estimated percentages of total population.

Question 3. Importance of EPA Library Benefits

> Question Text: "Please indicate how important the following benefits of using an EPA library are to you."

To better understand if and how the patrons see EPA libraries as benefitting them, the survey asked respondents to gauge the importance of their using EPA libraries to help them save time, analyze information, etc. The responses indicate that the majority of patrons perceive their use of EPA libraries as very important for two things: saving them time in finding, gathering, and sorting information; and providing them with new information and resources they might not have found otherwise (see table 4 and fig. 6). By contrast, the patrons were much more divided on their views of EPA libraries as beneficial for helping them analyze information or making decisions. Around half feel the libraries are important or very important for these tasks, while the other half perceive them as less important or unimportant for these responsibilities or had no opinion altogether.

In addition to choosing predefined answers, some patrons wrote about the benefits they derive from the EPA libraries in an open-text field. These answers suggest that patrons see a wide range of benefits from their use of EPA libraries, from access to specific information resources (e.g., peer-reviewed publications, industry standards, etc.), to quiet places to work, to places for EPA employees to meet with representatives from academia, industry, and other organizations (see table 22 [pp. 63–64] in appendix III).

Table 4. Question 3 Responses

	Very important	Important	Somewhat important	Not important	No opinion	No answer
Saves me time in finding/gathering/ sorting information	67.4%	24.8%	3.0%	2.4%	5.1%	0.0%
Provides me with new resources and/or information that I otherwise would not have found	63.4%	28.2%	6.7%	1.4%	3.6%	0.0%
Helps support my decision-making process	29.5%	31.5%	16.3%	12.6%	11.6%	0.0%
Helps me analyze the information	20.5%	22.1%	24.1%	18.9%	15.3%	0.0%
Other	9.8%	0.7%	0.8%	0.3%	24.6%	63.8%

Figure 6. Question 3 Responses

All responses are estimated percentages of total population.
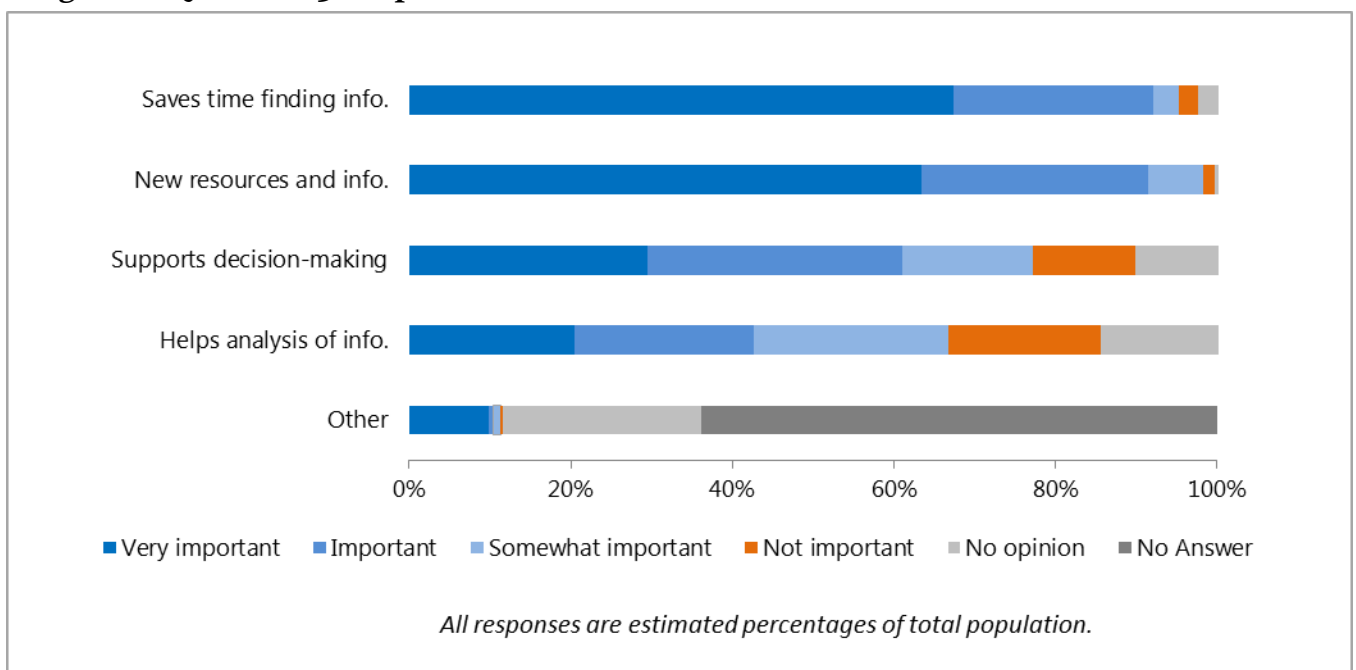
Question 4. Ratings of EPA Library Characteristics

Question Text: "Please rate EPA libraries on the following aspects."

Among other objectives, the survey sought to assess the patrons' opinions of library personnel and services such as the availability of library staff during operating hours and the accessibility of library services from alternate work sites. Broadly summarized, the survey answers indicate that patrons either have favorable views of EPA library staff and services or no opinion at all. More specifically, they have very favorable assessments of library staff, including staff demeanor, availability during operating hours, understanding of patrons' information requests, response times for information delivery, and the quality of information they provide (see table 5). Conversely, the respondents tended to have no opinion about several library services listed on the survey. For example, most had no opinion about the EPA libraries' "Ask a Librarian" chat

service, and nearly half of the respondents had no opinion about accessing library services from alternate work sites or the availability or effectiveness of training sessions (see fig. 7). Whether or not the respondents interpreted "no opinion" to mean "no knowledge of" cannot be inferred from the survey; nonetheless it is possible that these responses suggest patrons are simply not aware of or interested in such services.

The survey also indicates that a small percentage of patrons have unfavorable views of library staff and services, as less than 5 percent of respondents gave a rating of "fair" or "poor" to any aspect of staff or services.

Table 5. Question 4 Responses

	Excellent	Very good	Good	Fair	Poor	No opinion	No answer
Professional demeanor of the library staff	68.7%	19.8%	3.3%	0.0%	0.0%	9.5%	0.0%
Library staff's understanding of my information requests	59.4%	25.8%	4.6%	0.9%	0.3%	10.3%	0.0%
Response time for information delivery	58.2%	25.1%	7.5%	1.4%	0.5%	8.0%	0.0%
Availability of library staff during operating hours	58.2%	23.2%	5.6%	0.9%	0.0%	13.4%	0.0%
Accuracy, comprehensiveness, and currency of the information provided	48.8%	33.3%	7.4%	2.8%	0.6%	7.8%	0.0%
Convenience of library operating hours	43.7%	27.4%	10.8%	2.9%	0.4%	15.7%	0.0%
Access to library services from alternate work site (e.g., telework or fieldwork)	24.3%	15.5%	6.3%	2.2%	2.2%	49.2%	0.3%
Availability of training sessions	16.6%	23.9%	8.2%	2.4%	1.3%	47.9%	0.0%
Usefulness of "Ask a Librarian" live-chat reference service	16.3%	12.4%	2.4%	0.6%	0.3%	67.0%	1.1%
Effectiveness of training sessions	14.4%	21.3%	8.7%	1.7%	0.3%	49.6%	4.1%

Figure 7. Question 4 Responses
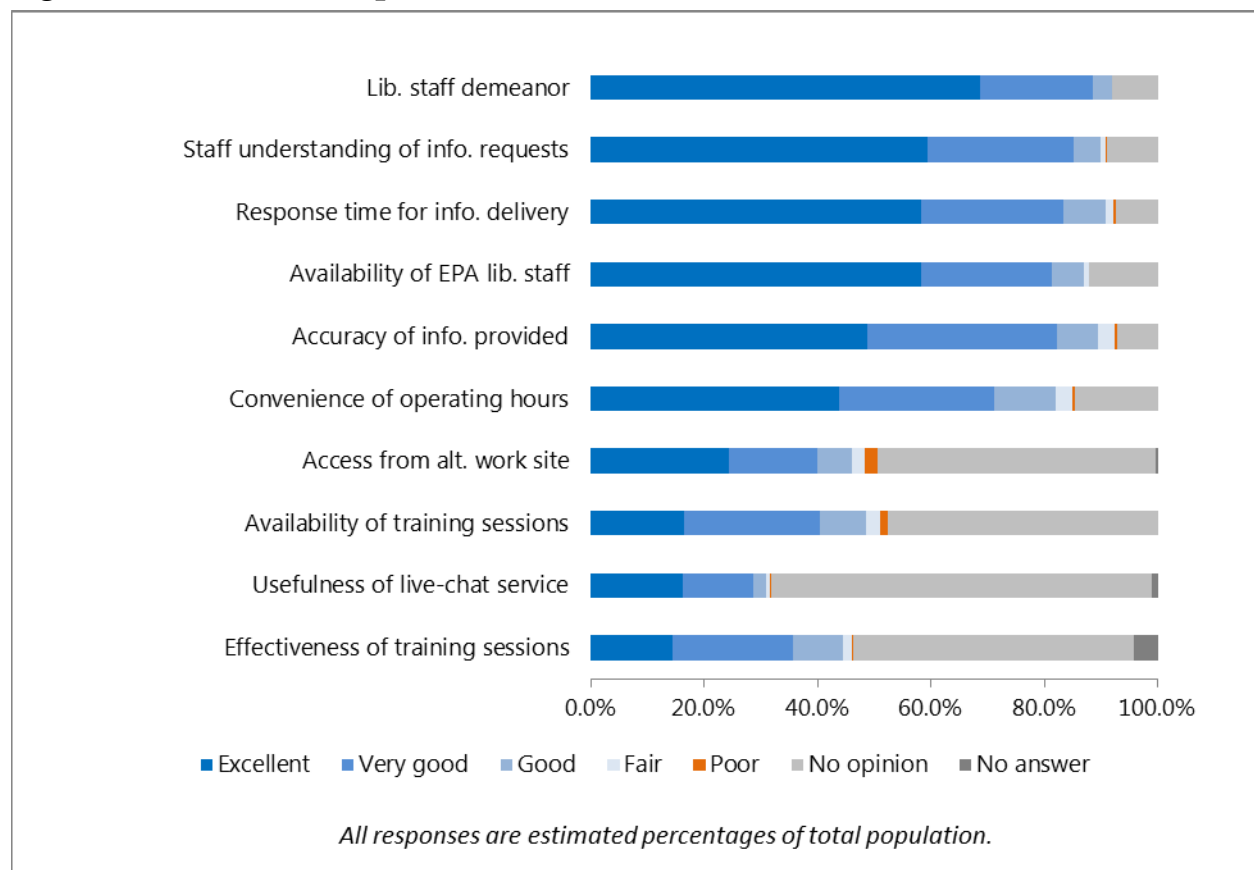
All responses are estimated percentages of total population.

Question 5. Information Management and Publishing

> Question Text: "Please describe why you gave EPA's libraries a 'Fair' or 'Poor' rating on any of the previous questions."

To determine why the patrons might have adverse opinions about the EPA library services offered and other topics addressed in questions 2–4, the survey provided respondents with an opportunity to submit additional information about those opinions in a free-form text box. Those responses are in table 23 (pp. 64–66) in appendix III.

Question 6. Assessments of Potential EPA Library Services: Research Services

> Question Text: "Theme: Research Services. Please indicate how valuable you would find the following potential future EPA library services or partnerships."

To assess the patrons' interest in potential future library services, a few survey questions asked respondents to gauge the value of various types of services for their work. With regard to research services that EPA libraries could deliver in the future, around half of the respondents rated most of the research services listed (four of five) as valuable for their work. Patrons appear to be most interested in two research services: data visualization and text mining, which is also referred to as text analytics or text data mining. Nearly 60 percent of the

respondents evaluated these services as "very valuable" or "valuable" for their work (see table 6). The responses also indicate patron interest in libraries providing impact analyses and in having library staff serve on research teams, with approximately 50 percent of respondents rating these service offerings as "very valuable" or "valuable" for their work (see fig. 8).

Of relatively less interest to patrons is having library staff analyze research results on their behalf, although the survey results suggest that this service is of interest to a significant portion of library customers. More specifically, the responses indicate that around 40 percent of patrons perceive such a service by the library as "valuable" or "very valuable," with the remainder having little interest in EPA libraries offering such a service or having no opinion of it at all.

Table 6. Question 6 Responses

	Very valuable	Valuable	Somewhat valuable	Not valuable	No opinion	No answer
Mining text for relevant information from large datasets	38.6%	32.4%	10.6%	4.5%	14.1%	0.0%
Providing data visualization services (e.g., visualizing data for papers or statistics for office annual reports)	26.5%	32.2%	12.3%	8.5%	20.4%	0.1%
Researching/publishing impact analyses	20.3%	28.8%	15.4%	8.4%	26.9%	0.2%
Analyzing research results on my behalf	18.9%	20.4%	16.8%	19.8%	24.0%	0.1%
Adding library staff to research project team	18.0%	32.1%	20.0%	9.4%	20.3%	0.2%

Figure 8. Question 6 Responses

All responses are estimated percentages of total population.
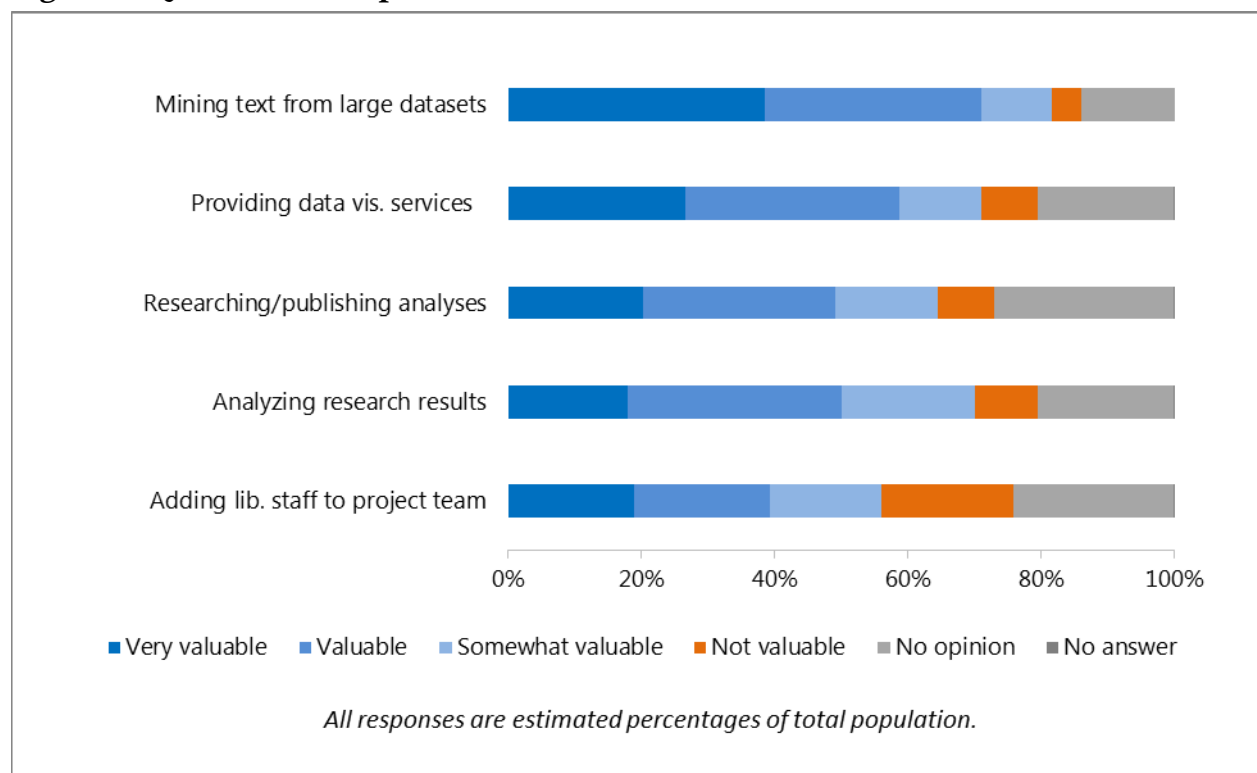
Question 7. Assessments of Potential EPA Library Services: Space Management

Question Text: "Theme: Space Management. Please indicate how valuable you would find the following potential future EPA library services or partnerships."

A second category of potential future services that the respondents assessed concerned potential reconfigurations of the libraries' infrastructure, such as collaboration spaces and visualization labs. The survey responses indicate that a majority of the patrons are interested in all of the possible space-related services listed, particularly individual quiet spaces and improved connectivity (see table 7 and fig. 9).

Moreover, patrons' interests in some space-related services appear to correspond with their interests in some of the research services discussed previously. For example, the survey responses suggest that patrons are interested in libraries providing data visualization services and hosting visualization labs. Similarly, responses indicate that patrons' interest in collaboration spaces could be associated with their interest in having library staff participate in research project teams. Thus, the EPA libraries could provide those services to patrons in a collaborative manner within the library spaces.

Table 7. Question 7 Responses

	Very valuable	Valuable	Somewhat valuable	Not valuable	No opinion	No answer
Providing individual quiet spaces in the library	31.9%	26.4%	13.1%	9.9%	19.6%	0.0%
Improving connectivity in library spaces	27.3%	30.6%	10.8%	5.6%	26.4%	0.0%
Providing collaboration spaces in the library	24.6%	29.8%	15.1%	10.7%	20.5%	0.0%
Providing space in the library to explore new technologies (e.g., makerspace, visualization lab, virtual reality)	23.8%	26.4%	16.1%	7.7%	26.1%	0.0%

Figure 9. Question 7 Responses

All responses are estimated percentages of total population.
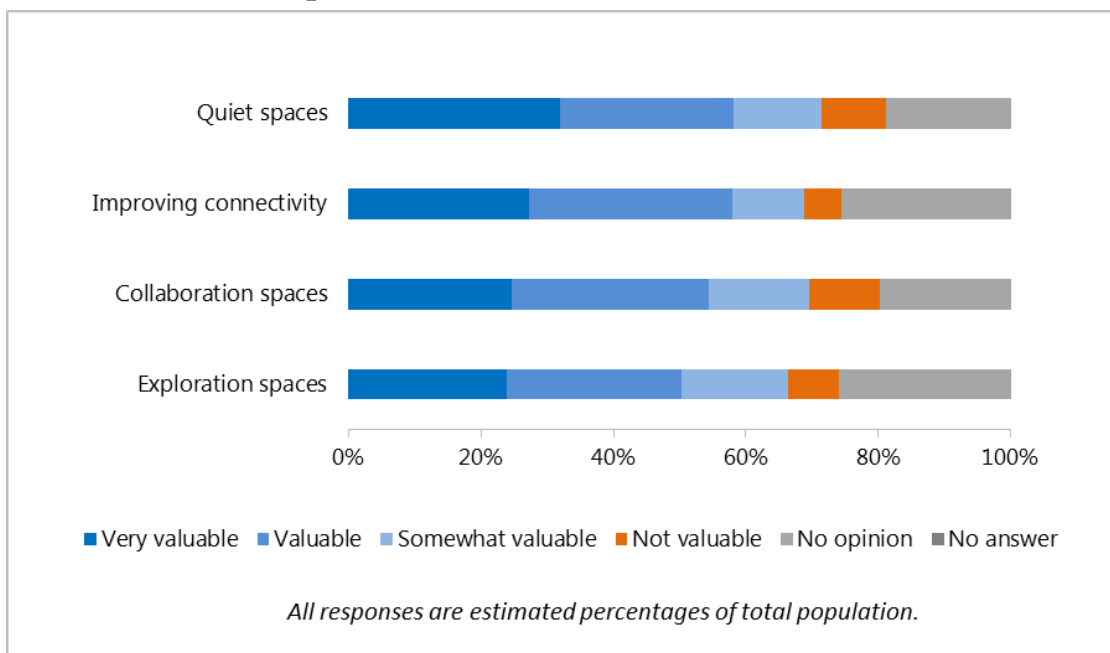
Question 8. Assessments of Potential EPA Library Services: Information Management and Publishing

> Question Text: "Theme: Information Management and Publishing. Please indicate how valuable you would find the following potential future EPA library services or partnerships."

The third and final category of potential future services listed in the survey encompassed dataset management and publishing assistance. The responses indicate that the majority of patrons (50 percent or more) are interested in all of the services listed, with patrons placing the greatest value on libraries preserving environmental datasets, which nearly 70 percent rated as "very valuable" or "valuable" for their work (see table 8). Following this, the survey responses indicate that patrons are also interested in EPA libraries providing guidance for publishing research in scientific journals, assisting with document number assignments for EPA publications, and helping with metadata and taxonomy for internal databases and datasets (see fig. 10).

Table 8. Question 8 Responses

	Very valuable	Valuable	Somewhat valuable	Not valuable	No opinion	No answer
Preserving environmental datasets	38.3%	28.8%	9.4%	1.9%	21.8%	0.0%
Providing guidance for publishing in scientific journals	31.5%	26.6%	12.0%	6.6%	23.5%	0.0%
Facilitating document number assignment for EPA publications	22.3%	28.1%	12.3%	3.6%	33.9%	0.0%
Providing metadata/taxonomy services for internal databases/datasets	21.6%	27.8%	14.8%	4.6%	31.4%	0.0%

Figure 10. Question 8 Responses
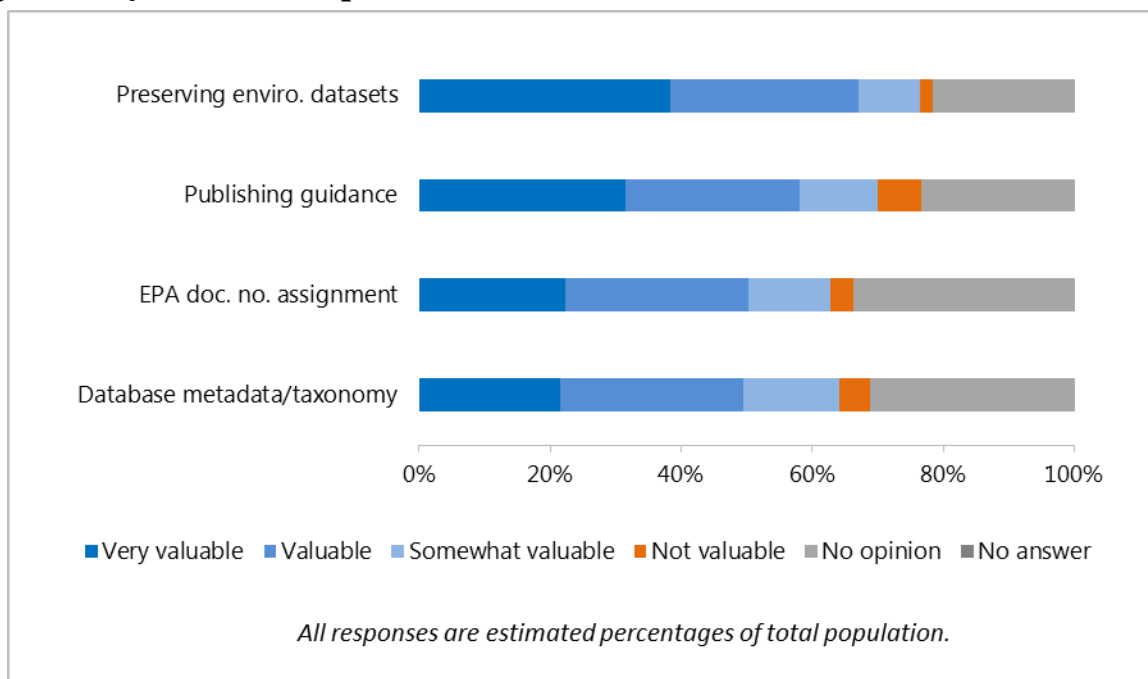
All responses are estimated percentages of total population.

Question 9. Other Potential Services EPA Libraries Can Provide

> Question Text: "Thinking broadly, are there other services with which you think the EPA libraries can be helpful as we move into the future? Please explain."

The numerous answers to this question contain a range of suggestions, including legal research, assisting patrons with finding information sources for, and providing particular data sources, such as quadrangle maps. These responses are included in table 24 (pp. 66–69) in appendix III.

Question 10. Assessments of EPA Electronic Library Services

> Question Text: "Please indicate the extent to which you agree or disagree with each of the following statements regarding the EPA's electronic library resources (such as Desktop Library, the National Library Catalog, and the NSCEP digital repository)."

In addition to soliciting their opinions about services EPA libraries could provide in the future, the survey asked library patrons about the libraries' current service offerings, such as electronic services. While the survey did not explicitly define "electronic library services," the question illustratively defined the term by listing examples that were assumed to be familiar to library patrons, such as the National Library Catalog.

The survey responses indicate that most patrons have favorable views of EPA libraries' electronic services. Nearly 80 percent of patrons feel that the library's electronic resources are of high quality and that those resources are not very difficult to use. Furthermore, approximately 75 percent of patrons feel that these resources are essential for their work (see table 9 and fig. 11).

Table 9. Question 10 Responses

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	No answer
EPA's library e-resources are essential to my work.	44.6%	31.1%	18.4%	3.9%	1.1%	1.0%
Overall, EPA's library e-resources have high-quality content.	39.5%	39.9%	18.1%	1.0%	0.3%	1.3%
The library's e-resources are too difficult to use.	1.9%	4.3%	38.8%	40.4%	13.3%	1.3%

Figure 11. Question 10 Responses
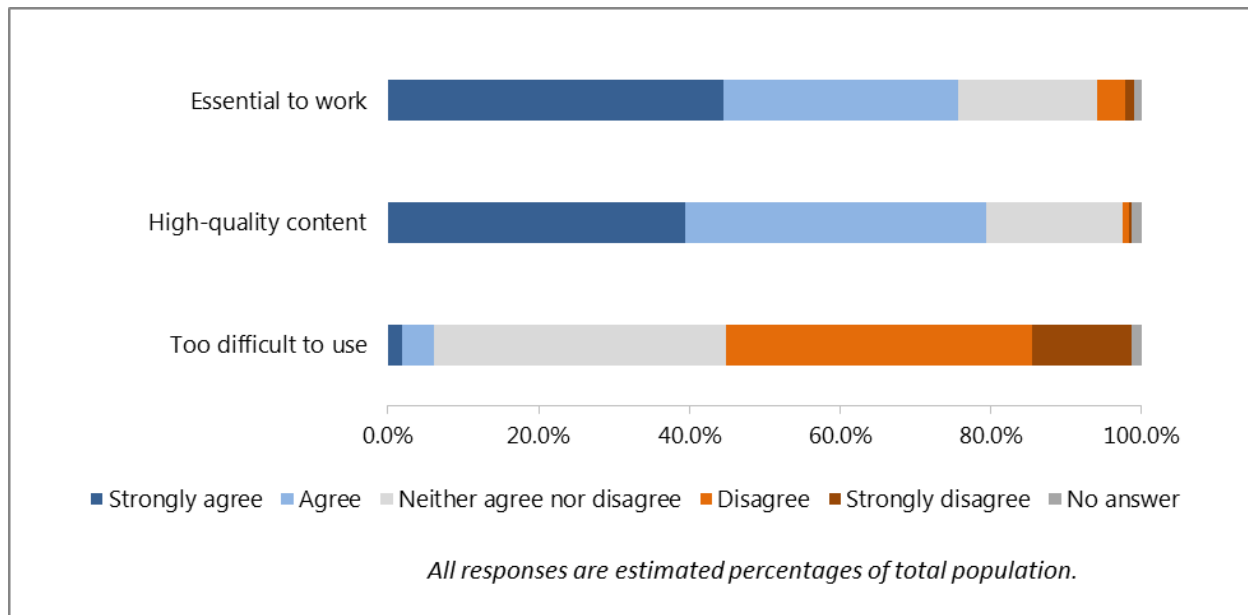
All responses are estimated percentages of total population.

Question 11. Most Relied Upon Information Types

> Question Text: "Please select up to five types of information that you rely on most often for work activities."

To determine the types of information that patrons use, the survey asked respondents to select up to five which they most relied upon for their work. Based on their responses, the majority of patrons most often rely on two types of information—EPA-generated data and information, and technical information and academic journals. Several other information types are relied upon by approximately 15–33 percent of patrons, including instructional materials and reference resources (see table 10 and fig. 12). Furthermore, nearly 5 percent of patrons rely on types of information not enumerated in the survey question, with respondents listing resources such as Dun & Bradstreet reports and environmental science textbooks (see table 25 [pg. 70] in appendix III).

It is interesting to note that while one-third of the patrons identified environmental datasets as a resource upon which they often rely, a far higher proportion expressed interest in having the EPA libraries maintain these resources (see question 8). This may suggest that patrons' interest in this type of information may be higher than what is indicated in responses to this question.

Table 10. Question 11 Responses

Type of Information	Percentage
Journal literature/scientific and technical information	76.6%
EPA-generated information/data (e.g., publications/reports, policies, guidance)	64.2%
Environmental datasets	33.8%
Reference sources (e.g., encyclopedias, directories, bibliographies, dictionaries, maps)	32.3%
Regulatory/compliance/enforcement/quality assurance information	31.8%

Type of Information	Percentage
Standards, specifications, and test methods	30.7%
News	26.1%
Legal Information/case law/public records	24.0%
Trade publications	21.1%
Demographic data/statistics	16.7%
Instructional materials	15.1%
Company, credit, financial, and market information	14.0%
Expertise and people profiles	6.7%
Other	5.3%
Patents	2.9%

Figure 12. Question 11 Responses
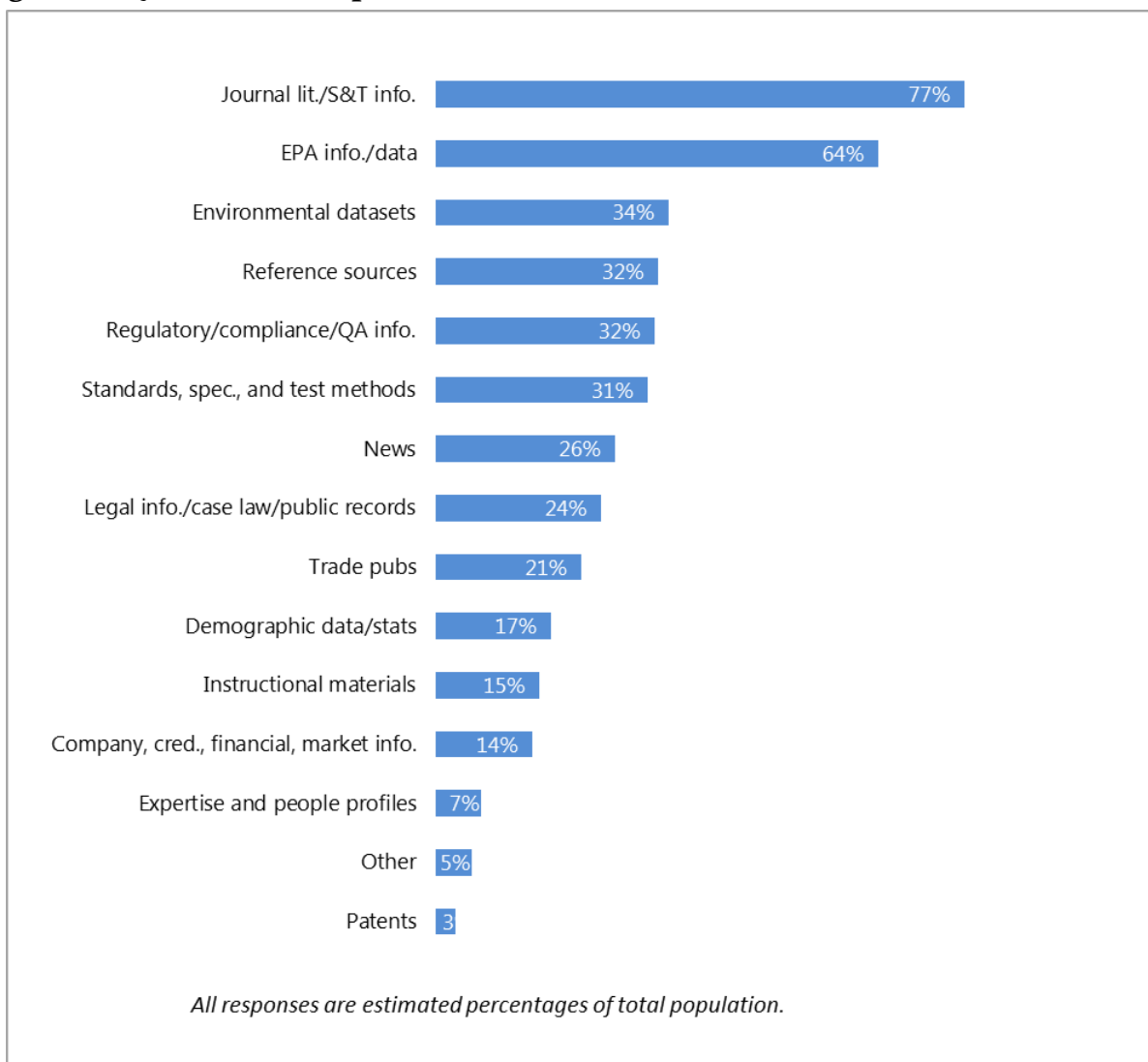
All responses are estimated percentages of total population.

Question 12. Resources Difficult to Find or Access

> Question Text: "Please list any databases, print sources, or other information resources you need but cannot find or access."

Survey respondents listed a wide array of resources that they cannot find at or access from EPA libraries. Two resources that multiple respondents named were journals produced by the American Chemical Society and the LexisNexis database. For the full list of responses to this question, see table 26 (pp. 70–72) in appendix III.

Question 13. Patrons' Practices in Locating and Obtaining Information

> Question Text: "Please indicate how often you use the following approaches to finding information for work."

With regard to the ways in which library patrons find work-related information, the survey responses suggest that they most frequently look for information themselves rather than seek assistance from someone else. Around half of the patrons occasionally seek assistance from EPA libraries to find information, with nearly one-fourth seeking library assistance on a frequent basis—roughly the same proportion as those who seldom or never seek this assistance (see table 11). Finally, the responses indicate that library patrons do employ help from contractors, interns, and other parties to find information, but most tend to do so occasionally or seldom (see fig. 13).

In addition to these answer choices, the survey respondents could state that they use an "other" approach and type a response. Among the 3 percent of respondents who chose this option, most provided answers that effectively duplicated the predefined answer choices, such as listing the internet or Google instead of "seek information out myself." The texts of these answers are in table 27 (pg. 72) in appendix III.

Table 11. Question 13 Responses

	Frequently	Occasionally	Seldom	Never	No answer
Seek information out myself	83.3%	13.1%	0.6%	0.6%	2.4%
Request assistance from the library	23.1%	49.3%	17.1%	7.8%	2.6%
Request assistance from others (e.g., SEE, intern, contractor)	11.1%	34.0%	31.9%	18.8%	4.1%

Figure 13. Question 13 Responses
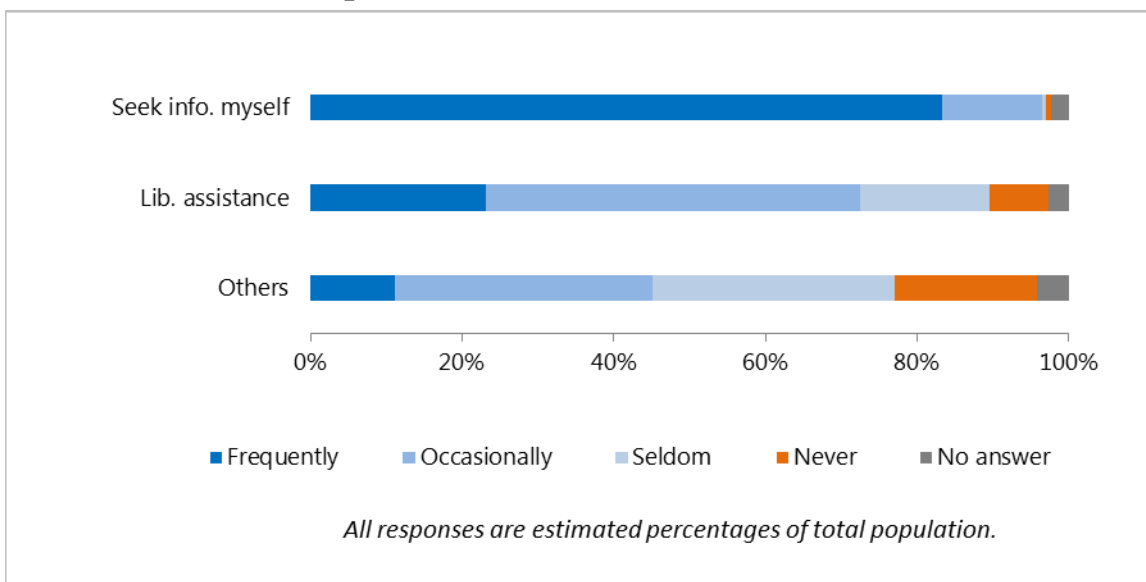
All responses are estimated percentages of total population.

Question 14. Frequently Used Information Sources

Question Text: "Please indicate how often you use the following sources to find information."

As for the sources that library patrons use to find information, the survey responses indicate that they most frequently use the internet, followed by the EPA website and intranet (see table 12). These answers are logically consistent with those for question 13, which highlighted the patrons' tendency to independently seek information. However, the responses also indicate that patrons less frequently utilize personal collections of information resources for their work.

Furthermore, the survey also inquired about patrons' use of other individuals and institutions as information resources. The responses indicate that around half frequently utilize their fellow EPA colleagues and experts to find information, while a slightly lower proportion occasionally utilize colleagues and experts outside of the agency (see fig. 14). Of possible interest to the EPA libraries is that its patrons seldom or never use outside library services.

In addition to these choices, the survey respondents could state that they used an "other" information source and type in that response; 3 percent chose this option (see table 28 [pg. 73] in appendix III).

Table 12. Question 14 Responses

	Frequently	Occasionally	Seldom	Never	No answer
Internet (e.g., Google Search, Google Scholar, PubMed)	94.3%	1.9%	0.5%	0.0%	3.3%
EPA intranet/internet	66.3%	22.1%	6.5%	1.4%	3.7%
Colleagues or experts at EPA	51.8%	37.6%	3.5%	2.4%	4.7%

	Frequently	Occasionally	Seldom	Never	No answer
My personal collection of information resources	36.0%	41.2%	15.2%	2.4%	5.2%
Colleagues or experts outside of EPA	14.1%	45.5%	27.2%	7.6%	5.6%
Library services outside of EPA (e.g., local university or public libraries)	10.8%	26.3%	39.0%	20.3%	3.6%

Figure 14. Question 14 Responses
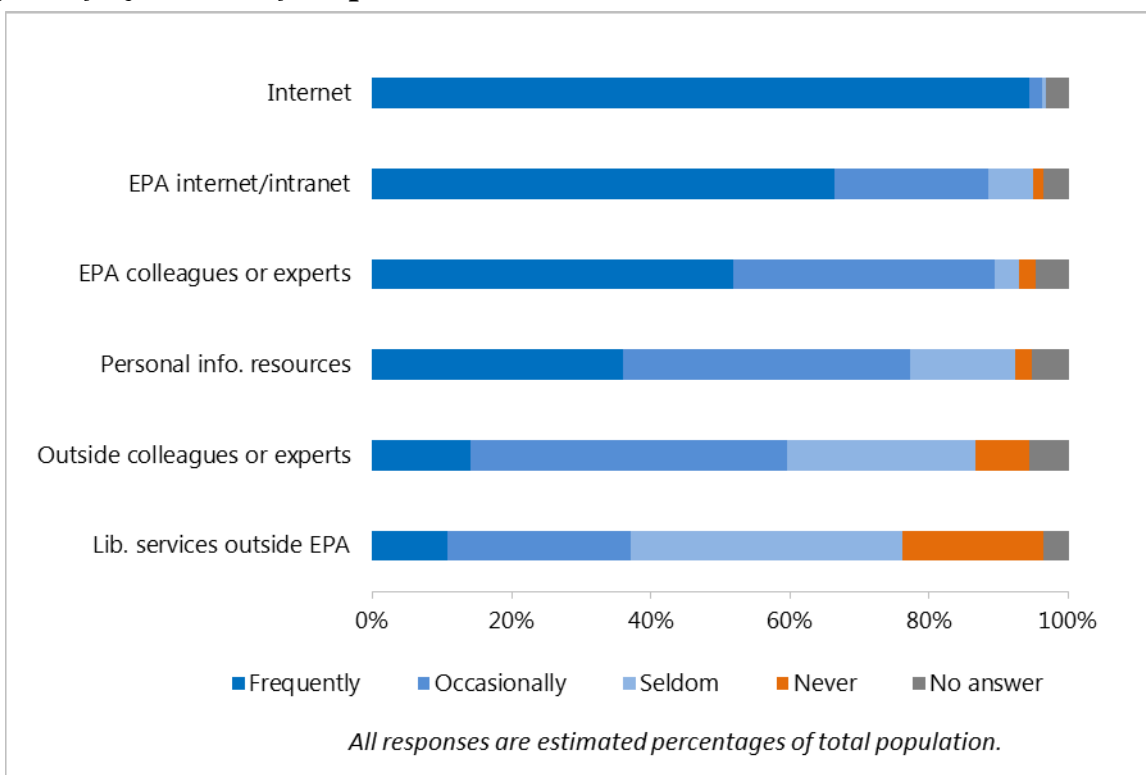
Question 15. Effective Ways of Learning about New Information Sources

> Question Text: "Please select the three most effective ways you learn about new information sources related to your work."

A subsequent question about EPA library patrons' information consumption behaviors inquired about the methods they found to be most effective for discovering new information resources. Among the six methods listed in the question, the survey responses suggest that library patrons often find their EPA colleagues to be the most effective way of finding out about new sources of information (see table 13). In addition, the responses indicate that around half of the patrons find two other methods to be particularly effective, namely professional association services and EPA libraries. Around 40 percent of the patrons feel the internet is an effective way to learn about new information resources, which is well below the high proportion of patrons who use the internet to find information (see fig. 15).

Some respondents (around 8 percent) listed "other" ways in which they learn about new information resources. These methods included conferences, journal articles, trainings, and other federal agencies. The text of these free-form responses is listed in table 29 (pp. 73–74) in appendix III.

Table 13. Question 15 Responses

Effective Ways of Learning about New Information Sources	Percentage
Colleagues	76.2%
Professional association service (e.g., training, publication, alert service)	54.3%
EPA library services such as library visit, library newsletter, library Web site, library training, library alert service	53.1%
Internet sources other than mass media, including blogs and social media	40.1%
Mass media such as newspapers, radio, and television	29.4%
Direct mail or Internet advertising from publisher	11.0%
Other	7.7%

Figure 15. Question 15 Responses

All responses are estimated percentages of total population.
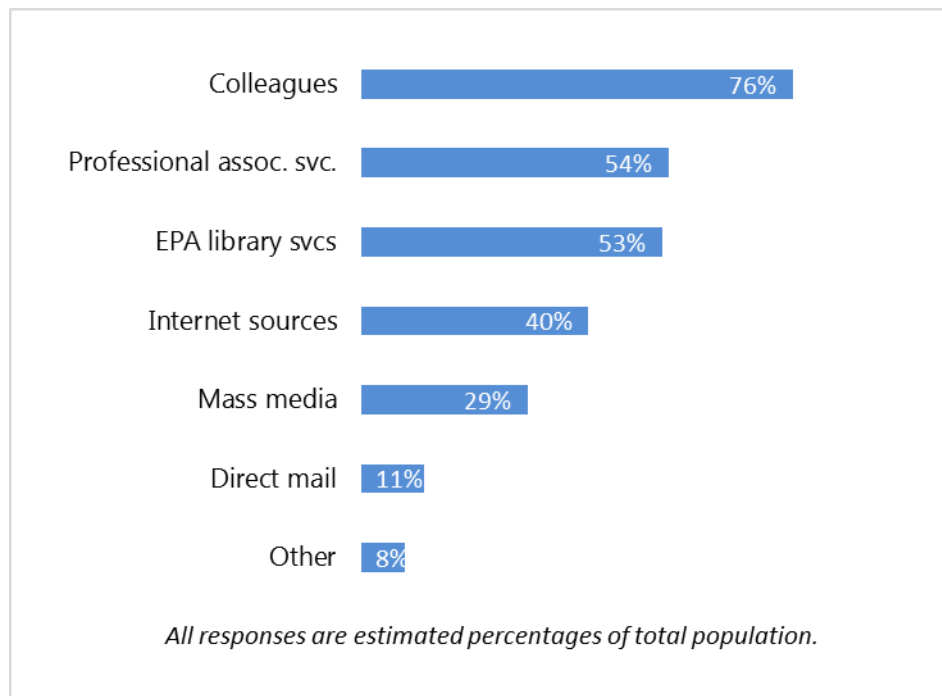
Question 16. Patrons' Success in Independently Finding Information

> Question Text: "Which of the following best describes your success in finding information on your own?"

In order to gauge the patrons' views of their success in finding the information they need on their own, the survey posed just that question to respondents. Based on their answers, the majority of patrons—around 61 percent—feel they independently find needed information most or all of time, while approximately 35 percent find the information they need some of the time or rarely (see table 14 and fig. 16).

Table 14. Question 16 Responses

Success in Independently Finding Information	Percentage
I find the information I need all or most of the time.	60.6%
I find the information I need some of the time.	34.8%
I find the information I need rarely.	0.6%
No answer	4%

Figure 16. Question 16 Responses
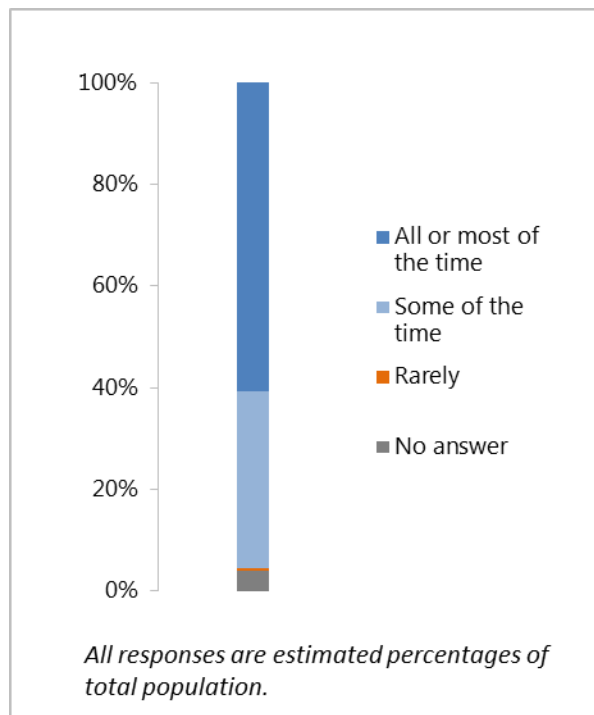
All responses are estimated percentages of total population.

Question 17. Functions Library Staff Could Perform to Save the Patrons Time

Question Text: "Please indicate which of the following functions library staff could perform to save you time."

Just as the survey sought to gauge the patrons' opinions about services the EPA libraries could provide in the future, it also aimed to measure their views about various research functions the library staff could perform. Among the seven functions listed in the survey, the highest percentage of respondents identified individual research consultations with librarians (see table 15).

Additionally, the responses indicate that significant proportions of patrons feel that library staff could provide other functions to save them time. Those functions include regularly scheduled searches on a topic of particular interest and providing updated citation lists, email and search alerts on identified subjects, and trainings on specific resources for individuals or small groups (see fig. 17).

The data suggest that the remaining functions are of interest to small proportions of patrons. The same is true of various other functions that patrons choose to name by choosing the "other" answer option (see table 30 [pg. 74] in appendix III).

Table 15. Question 17 Responses

Function Library Staff Could Perform to Save the Patrons Time	Percentage
Conducting one-on-one research consultations with a librarian	46.3%
Conducting regularly scheduled searches on your topic and sending updated citation lists	44.1%
Setting up email and/or search alerts on your topic/company/regulation	40.3%
Providing specific resource training for individuals or small groups	34.2%
Generating targeted lists of companies/organizations/educational institutions	15.4%
Gathering information for regular newsletters	9.5%
Assisting with annual citation counts	5.6%
Other (please specify)	5.8%

Figure 17. Question 17 Responses
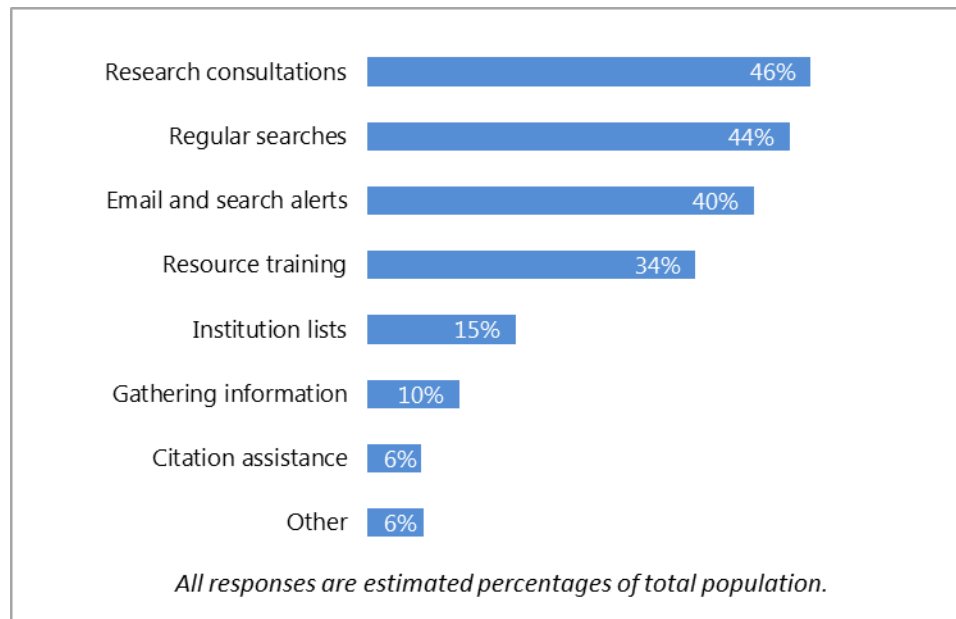
All responses are estimated percentages of total population.

Question 18. Frequency of Use of Information Sources

> Question Text: "Please indicate how often you use the following information sources for your work."

Among several questions related to library patrons' information consumption, one inquiring about the sources they most use for their work revealed that electronic information resources are used more regularly than print and other information types. Survey data indicate that an estimated 65 percent of patrons regularly use electronic books, journals, and resources for their work, with an additional 25 percent occasionally using such resources for that purpose (see table 16). Nearly 50 percent of the patrons regularly use the EPA's public website and the EPA intranet

for their work, and significant proportions occasionally use these resources for work (41 percent and 34 percent, respectively).

However, the response patterns for other types of electronic resources indicate that patrons do not use some categories for work. For example, around 50 percent are regular or occasional users of "other internet resources" and approximately 22 percent use social media. The relatively lower use of these resources suggests that while "electronic resources" can be used to describe the resources patrons most regularly use for their work, it is more accurate to say that they most regularly use certain types of electronic media rather than electronic resources in general.

With regard to EPA library services and materials, the survey responses indicate that around half of the patrons occasionally use print materials, reference and research services, and interlibrary loan or document delivery services. The data also indicate that relatively lower proportions of patrons—around 10–25 percent—regularly use these services for work. Furthermore, around 35 percent of patrons regularly or occasionally use the EPA library catalog, while the remainder never use or have never heard of it (see fig. 18). The free-form answers provided by those who selected "other" are included in table 31 (pg. 75) in appendix III.

Table 16. Question 18 Responses

	Use Regularly for Work	Use Occasionally for Work	Heard of, But Never Use for Work	Never Heard of	No answer
Electronic resources/journals/e-books	65.1%	24.7%	3.4%	0.0%	6.9%
intranet.epa.gov (EPA's internal site; not including Desktop Library or National Library Catalog)	53.1%	33.6%	6.7%	0.4%	6.2%
www.epa.gov (EPA's public Internet site)	47.5%	41.0%	5.1%	0.0%	6.4%
External information resources such as PubMed and ToxNet (National Library of Medicine), National Technical Reports Library, GPO	28.4%	30.3%	21.0%	13.1%	7.3%
EPA library interlibrary loan/document delivery services	25.3%	47.6%	16.2%	4.3%	6.7%
EPA library reference/research services	22.9%	48.9%	18.0%	2.9%	7.4%
Print materials from EPA library collections	12.9%	47.0%	27.8%	3.5%	8.9%
EPA National Service Center for Environmental Publications (NSCEP; digital archive of EPA publications)	10.3%	28.7%	26.7%	24.8%	9.4%
EPA National Library Catalog	6.0%	29.3%	37.9%	19.8%	7.0%
Social networking sites	3.2%	18.9%	60.8%	8.2%	8.8%
Other internet resources not identified above	22.4%	28.3%	10.3%	9.5%	29.5%

Figure 18. Question 18 Responses
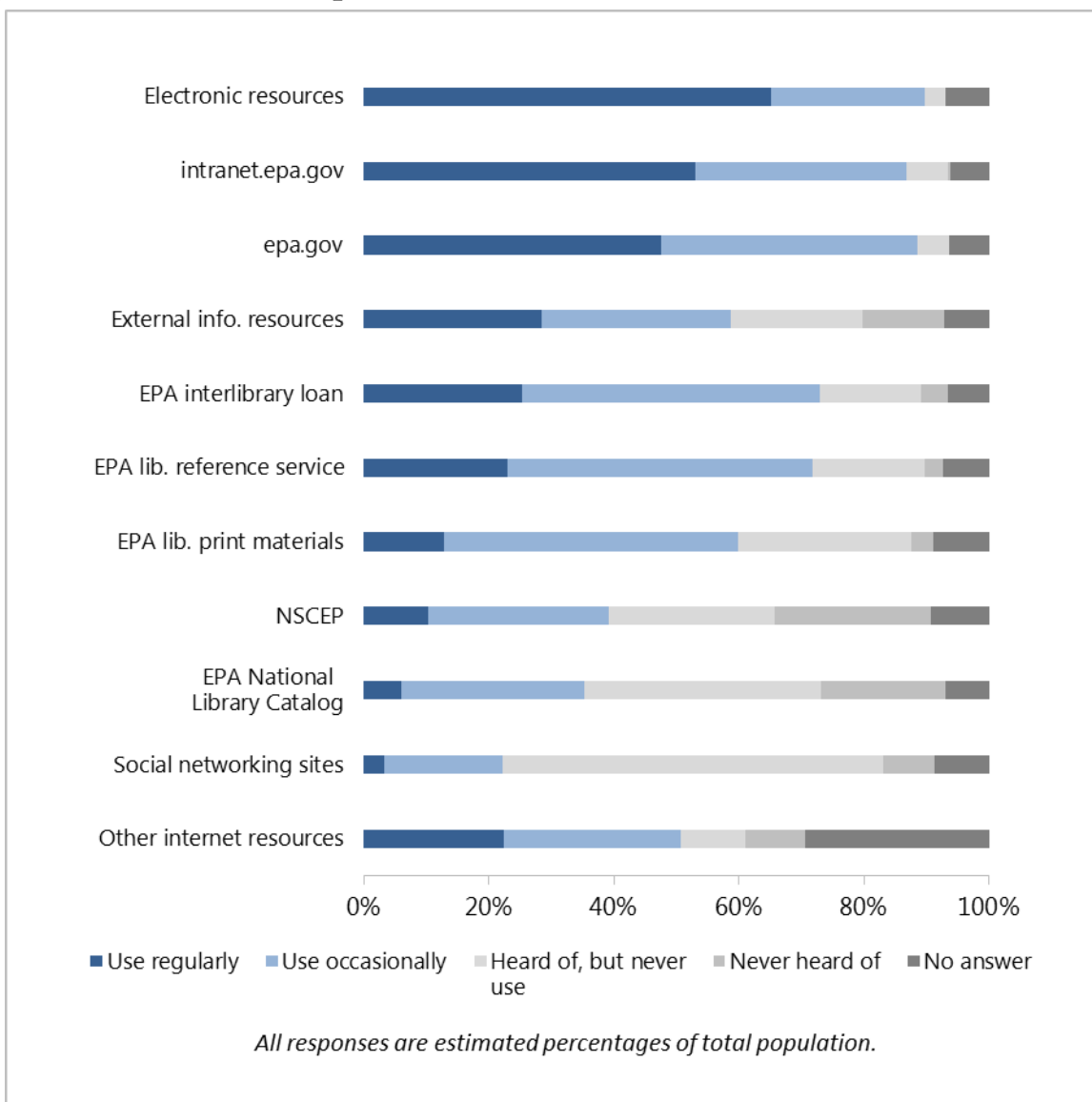
Question 19. Library Staff and Resources

> Question Text: "Please indicate how often library staff and/or library resources help you find the information you need."

The survey responses indicate that patrons feel that library staff and resources help them find the information they need more often than not. An estimated 52 percent of patrons feel that library staff and resources assist them in locating needed information all or most of the time, with approximately 32 percent feeling this way some of the time. By contrast, 12 percent of patrons feel that library staff and resources rarely help them find the information they need (see table 17 and fig. 19).

Table 17. Question 19 Responses

All or Most of the Time	Some of the Time	Rarely	No answer
51.9%	31.6%	12.1%	4%

Figure 19. Question 19 Responses
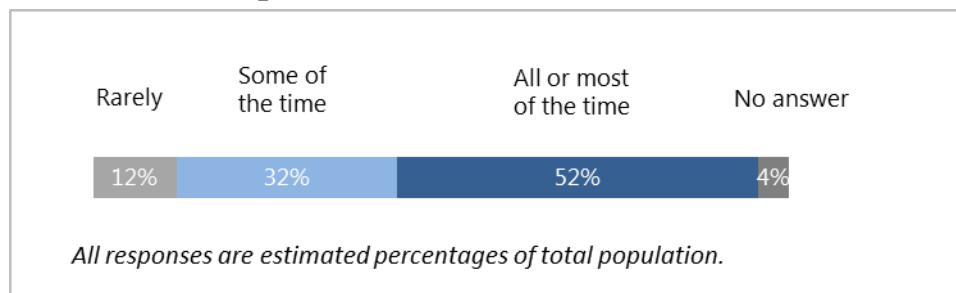
Rarely 12% | Some of the time 32% | All or most of the time 52% | No answer 4%

All responses are estimated percentages of total population.

Question 20. Obstacles to Finding and Using Information

Question Text: "Please indicate the extent to which the following factors are problems or obstacles to finding and using information for your work."

To better understand the difficulties patrons experience in obtaining information, the survey asked respondents to assess various aspects of their information acquisition and use. Overall, the survey responses indicate that patrons generally do not have strong feelings one way or another about these issues. Rather, the greatest proportions of patrons regard many aspects of information access and use minorly problematic.

Nearly half of respondents feel that finding information is a minor problem, with the most common extreme difficulty patrons experience is acquiring full-text research material (see table 18 and fig. 20). The most apparent results from the survey are that the majority of patrons feel they experience no problems with EPA libraries' opening hours or response times, which is consistent with findings from other questions on these same topics. Respondents were also asked to provide additional feedback in free-form textboxes; the results are listed in table 32 (pg. 76) in appendix III.

Table 18. Question 20 Responses

	Major Problem	Minor Problem	Not a Problem	No Opinion	No Answer
Full text is not always available	29.8%	35.8%	20.5%	6.4%	7.4%
Not knowing what's available	23.7%	44.6%	20.2%	5.5%	6.1%
Information overload	18.3%	37.2%	28.6%	8.4%	7.6%
Information is too hard to find	14.6%	46.2%	26.9%	5.2%	7.1%
Not being able to compare across information alternatives	11.1%	34.7%	31.1%	14.9%	8.2%
Information is not comprehensive enough	10.4%	38.3%	36.1%	8.2%	7.0%
Information is not timely/not updated often enough	10.2%	30.9%	43.2%	7.9%	7.8%

	Major Problem	Minor Problem	Not a Problem	No Opinion	No Answer
Hard to determine the quality/credibility/accuracy of information	10.0%	39.9%	36.7%	6.0%	7.4%
Insufficient training on how to search for and use information	9.5%	37.5%	38.9%	6.7%	7.4%
Lack of online access from offsite location	7.3%	17.5%	41.6%	24.7%	8.8%
Library operating hours are inconvenient	2.0%	11.7%	66.7%	12.1%	7.5%
Response times for library services are too long	0.9%	11.9%	64.3%	12.2%	10.7%

Figure 20. Question 20 Responses
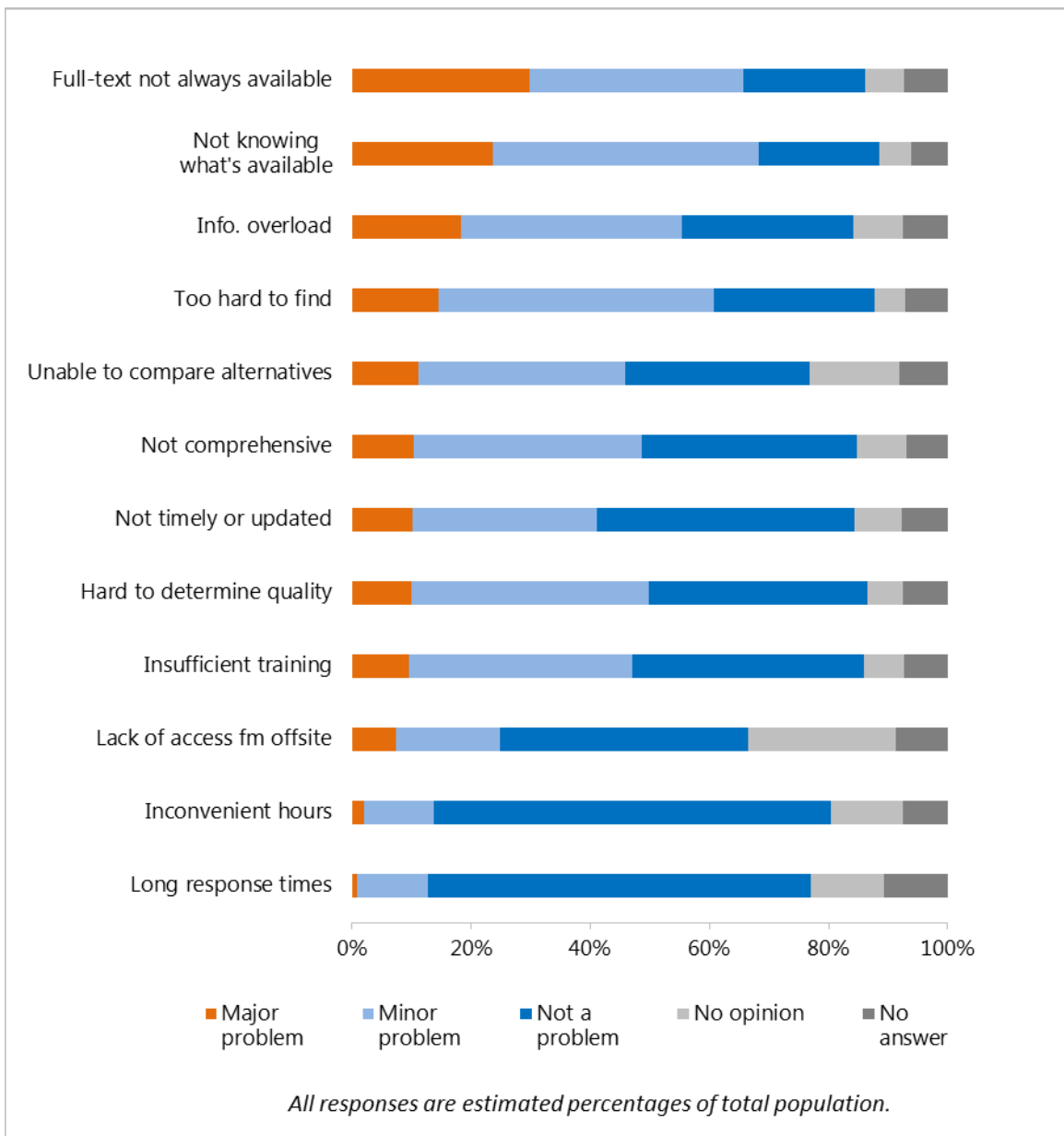
All responses are estimated percentages of total population.

Question 21. Patrons' Departments and Functions

> Question Text: "Please indicate your primary functional area or department at EPA."

To determine the patrons' occupational backgrounds, the survey asked respondents to choose their primary function or department at EPA or to provide their own free-form text answer if their occupation was not listed among the available choices. The most common response was R&D or science (35 percent), followed by enforcement and compliance (15 percent). Engineering, policy, and the other answer choices comprised less than 10 percent of library patrons (see table 19 and fig. 21). The free-form responses to this question are in table 33 (pp. 76–77) in appendix III.

Table 19. Question 21 Responses

Primary Function or Department	Percentage
R&D/Science	34.6%
Enforcement and Compliance	15.4%
Engineering	8.1%
Policy	6.6%
Regulation Development	5.3%
Administration/Strategic Planning	4.1%
General/Regional Counsel	3.5%
Emergency Response/Cleanup	3.2%
Communications/Public Affairs	1.4%
Information Systems/IT	1.0%
Information Management (including library)	0.3%
Other (please specify)	11.4%
No answer	5%

Figure 21. Question 21 Responses

All responses are estimated percentages of total population.
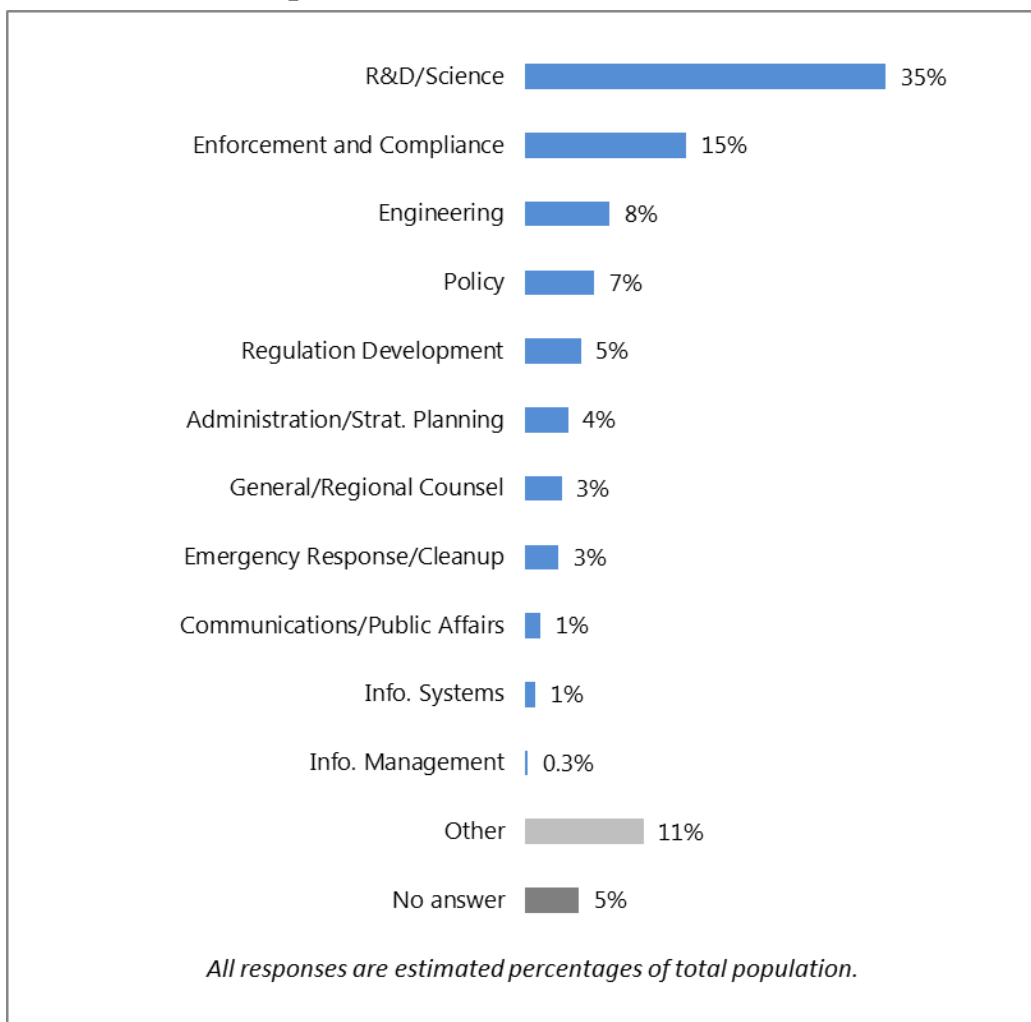
Question 22. Patrons' Employee Status

Question Text: "Please indicate your employee status."

Just as the survey asked about the patrons' primary functional area and department, it also sought to understand their occupational backgrounds by inquiring about their employment status at the EPA. The responses indicate that the overwhelming majority of patrons (80 percent) are EPA employees. Onsite contractors, grantees, and interns comprise small portions of patrons (around 1–6 percent each, see table 20 and fig. 22).

Additionally, nearly two percent of the patrons described their employee status as something other than the available answer choices, for example, as post-doctoral fellows or as part of the Senior Environmental Employment (SEE) program. These free-form responses are contained in table 34 (pg. 77) in appendix III.

Table 20. Question 22 Responses

Employee Status	Percentage
EPA employee	79.8%
Onsite contractor	5.9%
Grantee	5.3%
Intern	1.2%
Other (please specify)	2.4%
No answer	5%

Figure 22. Question 22 Responses
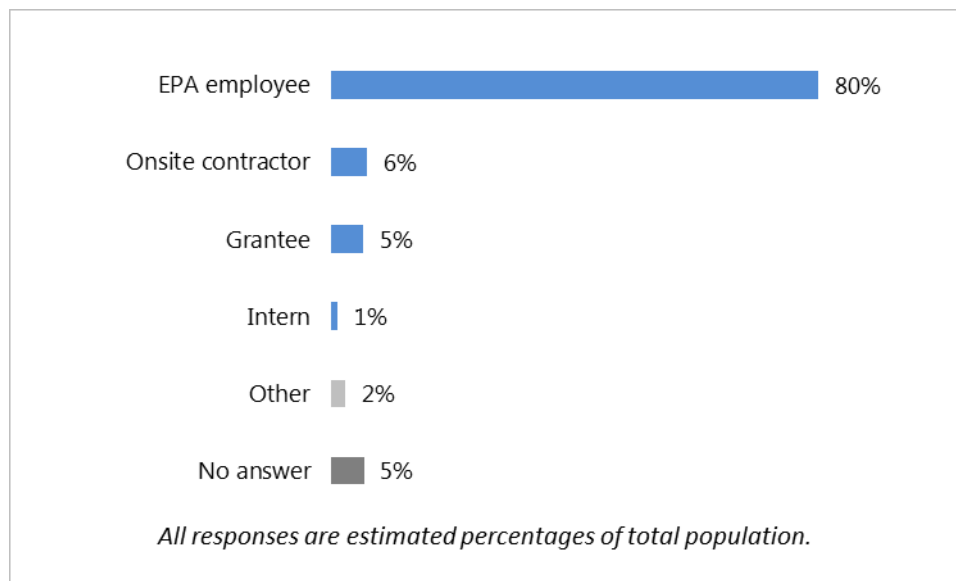
All responses are estimated percentages of total population.

Question 23. Additional Comments Regarding Information Needs

Question Text: "Please provide any additional comments you would like to share regarding your information needs."

The survey offered patrons an opportunity to provide additional feedback concerning their information needs that might not have been captured in the pre-defined survey responses. Respondents who chose to answer this question provided their responses in a free-form textbox; those responses are contained in table 35 (pp. 77–79) in appendix III.

Question 24. Additional Suggestions for How EPA Libraries Can Deliver Better Services

Question Text: "Please provide any additional suggestions for how EPA libraries can deliver better services."

Similar to question 23, in question 24, the survey allowed patrons to provide further information about bettering the EPA libraries' services. Respondents' answers to this question are listed in table 36 (pp. 79–80) in appendix III.

SURVEY RESPONSE PARADATA

Of possible interest for this and other EPA surveys or outreach efforts is information about the dates, days, and times during which individuals responded to this survey. This information about survey processes can be used to analyze the ways in which surveys are administered, which, in turn, can support cost and quality improvements in future polling.[7]

These data were derived from SurveyMonkey as it automatically generates information about the times and dates during which individuals begin and end their engagement with a survey. However, these results only provide information about individuals who responded to at least one survey question.

Survey Reponses by Date

During the time period for which the survey was available for response there was a clear fluctuation in the number of respondents from one day to the next. Nonetheless, the majority of responses—specifically partial and complete responses—occurred in the first half of the survey period, with over half occurring by the sixth day of the 25-day cycle and two-thirds by the fourteenth day (see fig. 23).

Figure 23. Survey Responses by Date

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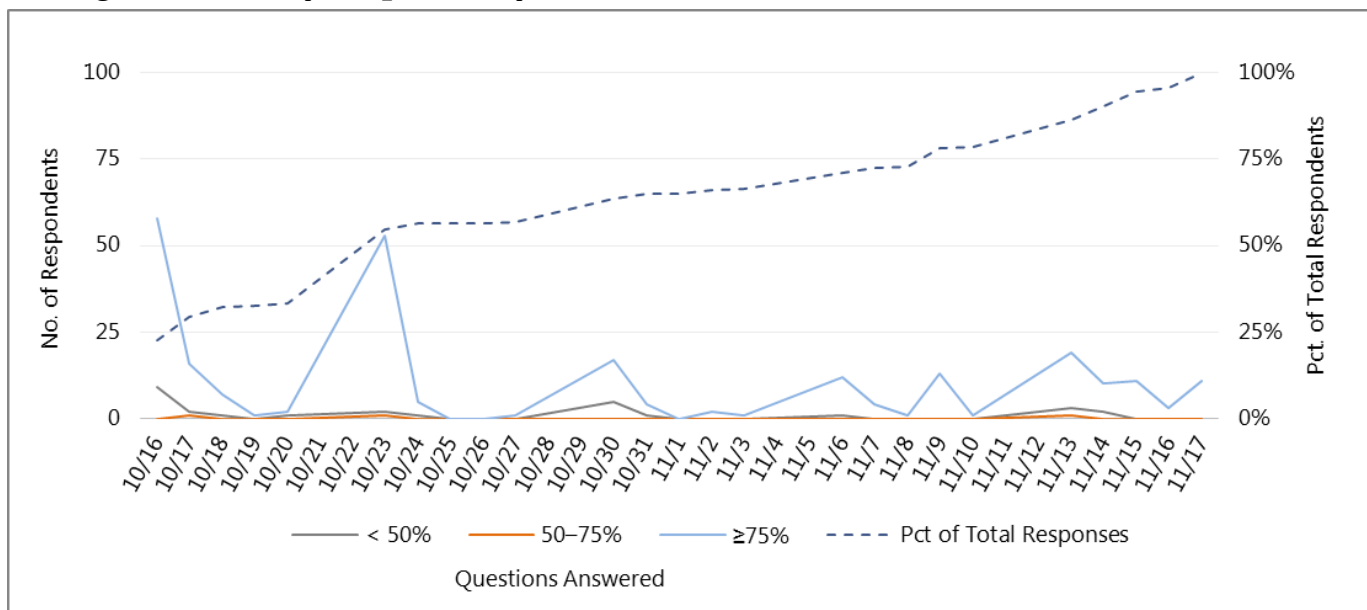
[7] Frauke Kreuter, Mick P. Couper, and Lars Lyberg, "The Use of Paradata to Monitor and Manage Survey Data Collection," in *JSM Proceedings: Survey Research Methods Section* (Alexandria, VA: American Statistical Association, 2010), 282–96, https://ww2.amstat.org/sections/srms/Proceedings/y2010/Files/306107_55863.pdf.

Survey Reponses by Day

A related point about the survey timing is that most responses occurred early in the work week. For example, the responses peaked on Mondays and decreased each subsequent day until Friday (see fig. 24). This suggests that the invitation recipients were responsive to the email reminders distributed each Monday through the SurveyMonkey platform.

Figure 24. Survey Responses by Day
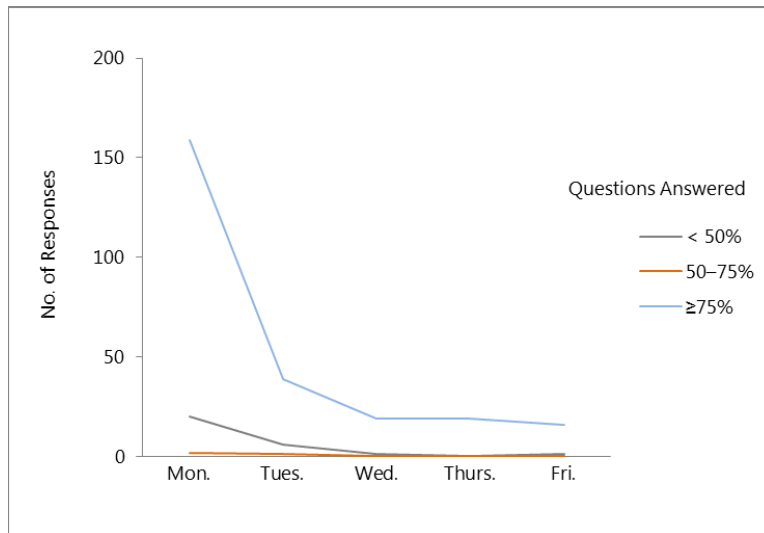
Survey Reponses by Hour of Day

Based on the SurveyMonkey data, the survey responses appear to have occurred largely within two hourly periods, 9 a.m. to 12 p.m. and 3 p.m. to 5 p.m. (see fig. 25).

Figure 25. Survey Responses by Hour of Day
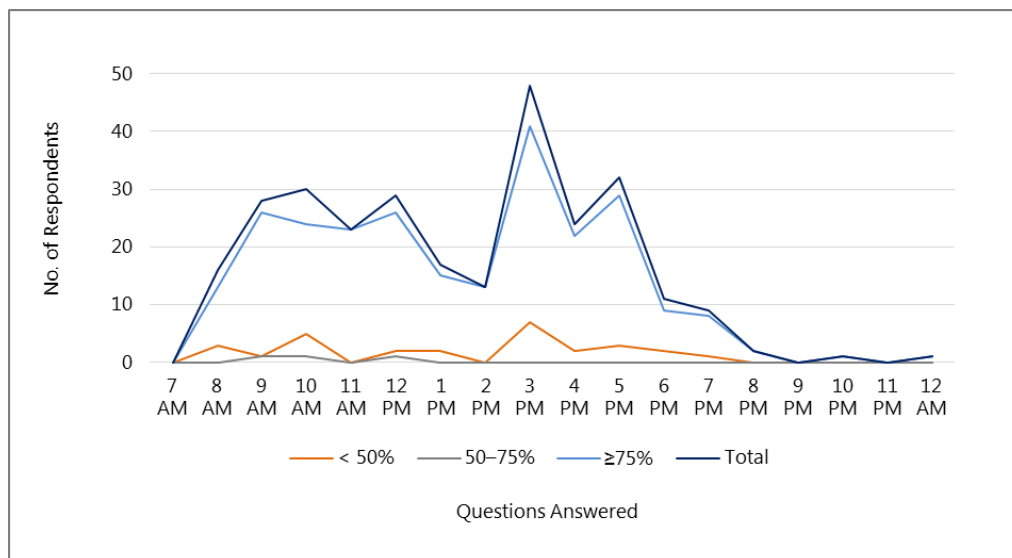
Survey Responses by Duration of Response Time

Most of the respondents spent no more than 30 minutes on answering the survey, with most spending 15 minutes or less (see fig. 26). However, the SurveyMonkey paradata does not give any insight into whether respondents were providing sincere, reliable answers to questions or if they were quickly or randomly selecting answers in order to complete the survey.

Figure 26. Survey Responses by Duration of Response Time
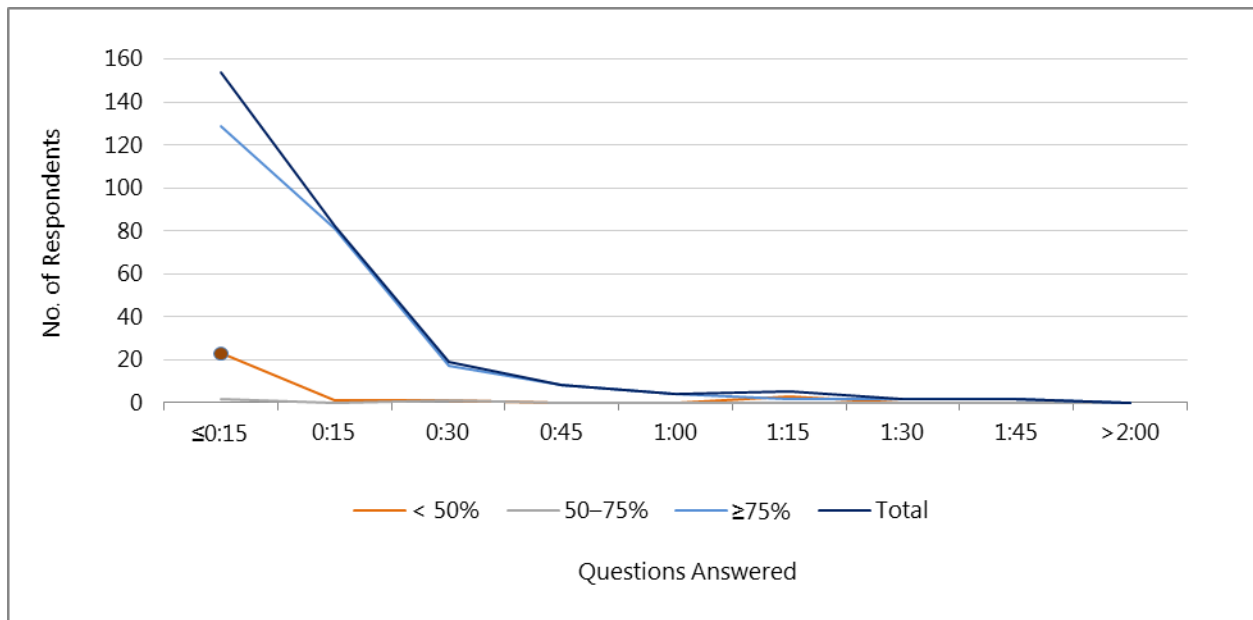
Additional insights about the reasons why individuals did not respond to the survey could be obtained through interviews with a random sample of non-respondents.

APPENDIX I. SURVEY INVITATION AND REMINDERS

FRD sent invitations and reminders to the surveyed individuals on the following dates:

Date	Day	Communication	No. of Persons Contacted
October 16, 2017	Monday	Initial Invitation	696
October 23, 2017	Monday	Reminder	586
October 30, 2017	Monday	Reminder	523
November 6, 2017	Monday	Reminder	493
November 13, 2017	Monday	Reminder	461
November 15, 2017	Wednesday	Reminder	425
November 17, 2017	Friday	Reminder	411

APPENDIX II. SURVEY FORM

INTRODUCTION

The EPA National Library Network has partnered with the Federal Research Division (FRD) of the Library of Congress to conduct a library-user needs assessment survey. Your participation will help the EPA National Library Network better serve the needs of patrons like you.

Thank you for taking the time to complete this survey. Please answer the following questions as completely and accurately as possible. Your responses will be aggregated to maintain confidentiality; no individual respondents will be identified.

For additional information, questions, or comments, please contact one of the following representatives:

EPA (general EPA National Library Network and administrative questions):

Deborah Balsamo, April Errickson, and Rachel Holderied
EPA National Library Network
Email: epalibrarynetwork@epa.gov

Library of Congress (technical issues and questions regarding survey content):

Noel Ivey, Patrick Miller, and Alan Stone
Federal Research Division
Email: surveysfrd@loc.gov

This survey will take approximately 15 minutes to complete.

LIBRARY USE

1. Please indicate how often you access an EPA library (including in person, by telephone, by email, via the Web, or live chat) to obtain information.

○ Daily

○ Several times a week

○ Weekly

○ Monthly

○ Every three months

○ Every six months

○ Once a year

LIBRARY USE

2. Please indicate which of the following you use to learn about EPA library services. Please check all that apply.

- [ ] Library Intranet site
- [ ] Library tours, orientations, and open houses
- [ ] Local/regional EPA library brochures, emails, flyers, handouts, newsletters, and posters
- [ ] Training events/sessions
- [ ] Visits to the library (not including tours, orientations, and open houses)
- [ ] Word of mouth
- [ ] Other (please specify)

LIBRARY USE

3. Please indicate how important the following benefits of using an EPA library are to you.

	Very Important	Important	Somewhat Important	Not Important	No Opinion
Saves me time in finding/gathering/sorting information	○	○	○	○	○
Provides me with new resources and/or information that I otherwise would not have found	○	○	○	○	○
Helps me analyze the information	○	○	○	○	○
Helps support my decision-making process	○	○	○	○	○
Other	○	○	○	○	○

Other (please specify)

LIBRARY USE

4. Please rate EPA libraries on the following aspects.

	Excellent	Very Good	Good	Fair	Poor	No Opinion
Accuracy, comprehensiveness, and currency of the information provided	○	○	○	○	○	○
Response time for information delivery	○	○	○	○	○	○
Usefulness of "Ask a Librarian" live-chat reference service	○	○	○	○	○	○
Availability of library staff during operating hours	○	○	○	○	○	○
Convenience of library operating hours	○	○	○	○	○	○
Professional demeanor of the library staff	○	○	○	○	○	○
Library staff's understanding of my information requests	○	○	○	○	○	○
Access to library services from alternate work site (e.g., telework or fieldwork)	○	○	○	○	○	○
Availability of training sessions	○	○	○	○	○	○
Effectiveness of training sessions	○	○	○	○	○	○

LIBRARY USE

5. Please describe why you gave EPA's libraries a "Fair" or "Poor" rating on any of the previous questions.

LIBRARY USE

6. The following three questions reference potential future library services or partnerships that you might find helpful. Please indicate how valuable you would find such offerings to your work.

THEME: RESEARCH SERVICES
Please indicate how valuable you would find the following potential future EPA library services or partnerships.

	Very Valuable	Valuable	Somewhat Valuable	Not Valuable	No Opinion
Adding library staff to research project team	○	○	○	○	○
Analyzing research results on my behalf	○	○	○	○	○
Providing data visualization services (e.g., visualizing data for papers or statistics for office annual reports)	○	○	○	○	○
Mining text for relevant information from large datasets	○	○	○	○	○
Researching/publishing impact analyses	○	○	○	○	○

LIBRARY USE

7. THEME: SPACE MANAGEMENT

Please indicate how valuable you would find the following potentail future EPA library services or partnerships.

	Very Valuable	Valuable	Somewhat Valuable	Not Valuable	No Opinion
Improving connectivity in library spaces	○	○	○	○	○
Providing collaboration spaces in the library	○	○	○	○	○
Providing individual quiet spaces in the library	○	○	○	○	○
Providing space in the library to explore new technologies (e.g., makerspace, visualization lab, virtual reality)	○	○	○	○	○

LIBRARY USE

8. THEME: INFORMATION MANAGEMENT AND PUBLISHING

Please indicate how valuable you would find the following potential future EPA library services or partnerships.

	Very Valuable	Valuable	Somewhat Valuable	Not Valuable	No Opinion
Facilitating document number assignment for EPA publications	○	○	○	○	○
Providing metadata/taxonomy services for internal databases/datasets	○	○	○	○	○
Preserving environmental datasets	○	○	○	○	○
Providing guidance for publishing in scientific journals	○	○	○	○	○

LIBRARY USE

9. Thinking broadly, are there other services with which you think the EPA Libraries can be helpful as we move into the future? Please explain.

LIBRARY USE

10. Please indicate the extent to which you agree or disagree with each of the following statements regarding the EPA's electronic library resources (such as Desktop Library, the National Library Catalog and the NSCEP digital repository).

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
EPA's library e-resources are essential to my work.	○	○	○	○	○
Overall, EPA's library e-resources have high-quality content.	○	○	○	○	○
The library's e-resources are too difficult to use.	○	○	○	○	○

INFORMATION USE HABITS

11. Please select up to five types of information that you rely on most often for work activities.

☐ EPA-generated information/data (e.g., publications/reports, policies, guidance)

☐ Journal literature/scientific and technical information

☐ Environmental datasets

☐ Trade publications

☐ Reference sources (e.g., encyclopedias, directories, bibliographies, dictionaries, maps)

☐ News

☐ Patents

☐ Legal Information/case law/public records

☐ Standards, specifications, and test methods

☐ Regulatory/compliance/enforcement/quality assurance information

☐ Company, credit, financial, and market information

☐ Demographic data/statistics

☐ Expertise and people profiles

☐ Instructional materials

☐ Other (please specify)

INFORMATION USE HABITS

12. Please list any databases, print sources, or other information resources you need but cannot find or access.

INFORMATION USE HABITS

13. Please indicate how often you use the following approaches to finding information for work.

	Frequently	Occasionally	Seldom	Never
Request assistance from the Library	○	○	○	○
Request assistance from others (e.g., SEE, intern, contractor)	○	○	○	○
Seek information out myself	○	○	○	○

Other (please specify)

[ ]

INFORMATION USE HABITS

14. Please indicate how often you use the following sources to find information.

	Frequently	Occasionally	Seldom	Never
Internet (e.g., Google Search, Google Scholar, PubMed)	○	○	○	○
EPA Internet/Intranet	○	○	○	○
Library services outside of EPA (e.g. local university or public libraries)	○	○	○	○
My personal collection of information resources	○	○	○	○
Colleagues or experts at EPA	○	○	○	○
Colleagues or experts outside of EPA	○	○	○	○

Other (please specify)

INFORMATION USE HABITS

15. Please select the three most effective ways you learn about new information sources related to your work.

☐ EPA library services such as library visit, library newsletter, library Web site, library training, library alert service

☐ Professional association service (e.g., training, publication, alert service)

☐ Colleagues

☐ Mass media such as newspapers, radio, and television

☐ Internet sources other than mass media, including blogs and social media

☐ Direct mail or Internet advertising from publisher

☐ Other (please specify)

INFORMATION USE HABITS

16. Which of the following best describes your success in finding information on your own?

○ I find the information I need all or most of the time.

○ I find the information I need some of the time.

○ I find the information I need rarely.

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INFORMATION USE HABITS

17. Please indicate which of the following functions library staff could perform to save you time.

☐ Conducting regularly scheduled searches on your topic and sending updated citation lists

☐ Setting up email and/or search alerts on your topic/company/regulation

☐ Providing specific resource training for individuals or small groups

☐ Assisting with annual citation counts

☐ Gathering information for regular newsletters

☐ Generating targeted lists of companies/organizations/educational institutions

☐ Conducting one-on-one research consultations with a librarian

☐ Other (please specify)

INFORMATION USE HABITS

18. Please indicate how often you use the following information sources for your work.

	Use Regularly for Work	Use Occasionally for Work	Heard of, but Never Use for Work	Never Heard of
Electronic resources/journals/e-books	○	○	○	○
www.epa.gov (EPA's public Internet site)	○	○	○	○
intranet.epa.gov (EPA's internal site; not including Desktop Library or National Library Catalog)	○	○	○	○
EPA library interlibrary loan/document delivery services	○	○	○	○
EPA library reference/research services	○	○	○	○
EPA National Library Catalog	○	○	○	○
EPA National Service Center for Environmental Publications (NSCEP; digital archive of EPA publications)	○	○	○	○
External information resources such as PubMed and ToxNet (National Library of Medicine), National Technical Reports Library, GPO	○	○	○	○
Social networking sites	○	○	○	○
Print materials from EPA library collections	○	○	○	○
Other Internet resources not identified above	○	○	○	○

Other (please specify)

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INFORMATION USE HABITS

19. Please indicate how often library staff and/or library resources help you find the information you need.

○ All or most of the time

○ Some of the time

○ Rarely

LIBRARY USE HABITS

20. Please indicate the extent to which the following factors are problems or obstacles to finding and using information for your work.

	Major Problem	Minor Problem	Not a Problem	No Opinion
Information is too hard to find	○	○	○	○
Hard to determine the quality/credibility/accuracy of information	○	○	○	○
Not knowing what's available	○	○	○	○
Not being able to compare across information alternatives	○	○	○	○
Insufficient training on how to search for and use information	○	○	○	○
Information is not timely/not updated often enough	○	○	○	○
Information is not comprehensive enough	○	○	○	○
Full text is not always available	○	○	○	○
Information overload	○	○	○	○
Library operating hours are inconvenient	○	○	○	○
Lack of online access from offsite location	○	○	○	○
Response times for library services are too long	○	○	○	○

Other (please specify)

[   ]

JOB

21. Please indicate your primary functional area or department at EPA.

- ○ Administration/Strategic Planning
- ○ Communications/Public Affairs
- ○ Emergency Response/Cleanup
- ○ Enforcement and Compliance
- ○ Engineering
- ○ General/Regional Counsel
- ○ Information Management (including library)
- ○ Information Systems/IT
- ○ Policy
- ○ R&D/Science
- ○ Regulation Development
- ○ Other (please specify)

JOB

22. Please indicate your employee status.

○ EPA employee

○ Grantee

○ Intern

○ Onsite contractor

○ Other (please specify)

CLOSING

23. Please provide any additional comments you would like to share regarding your information needs.

CLOSING

24. Please provide any additional suggestions for how EPA libraries can deliver better services.

APPENDIX III. FREE-FORM TEXT RESPONSES

Some of the questions in the EPA National Library Network User Needs Survey allowed the respondents to type in a textbox. This appendix contains nearly all of those free-form text responses. The FRD researchers omitted answers that contained language considered to be inappropriate or offensive, as well as responses that were of the form "none" or "N/A." The responses were also lightly edited for consistency and clarity.

Question 2. Ways Patrons Learn about EPA Library Services

> Question Text: "Please indicate which of the following you use to learn about EPA library services. Please check all that apply."

Table 21. Question 2 Free-Form Text Responses

No.	Response
1.	Email inquiries.
2.	Phone—to see if library can handle request.
3.	Emails from local librarian.
4.	I access journals through EPA online subscriptions daily.
5.	Via email as I am not sure that I know how to use the resources of our library. [A] brief training would help. There was one recently, but when I was on leave.
6.	Calls with librarian.
7.	HERONet.
8.	EPA Headquarters and Chemical Libraries and the "Ask a Librarian Reference Service" have been super helpful!
9.	Through the librarian at the Las Vegas laboratory. Richard Steele is great!
10.	By emailing our librarian.
11.	Talking directly with the librarian.
12.	I go down to the EPA Region 1 Library, which is on 1st floor of our building in Post Office Square, Boston.
13.	By asking. There are several . . . regional library teams [that let] employees know about resources and services, but I don't pay attention until I need something. Then, I ask. The team is helpful in doing what I need, or showing me how to do what I need.
14.	I've called the librarians to ask questions when I couldn't find [the answers] online.
15.	Emails that include information about EPA library resources.
16.	Emailing with local librarian.
17.	Already familiar with the library and the services. This question appears to be for only first-time users.
18.	Monthly emails from agency newsletter.
19.	Special observance displays such as Veterans Day and Black History Month.
20.	Journals and newsletters.
21.	Telephone librarian.
22.	Conversations (in-person, email) with the librarians.
23.	Talking to librarian.
24.	Phone calls to library staff.
25.	The 30-minute EPA library online webinars have been very helpful (e.g., using ASTM portal, accessing legal/regulatory information).
26.	Request scientific articles that cannot be found on the internet.
27.	Emailing the EPA librarian.

Question 3. Importance of EPA Library Benefits

Question Text: "Please indicate how important the following benefits of using an EPA library are to you."

[Table 22](#). Question 3 Free-Form Text Responses

No.	Response
1.	Access to high- and low-level peer-reviewed publications.
2.	A research tool.
3.	Has access to resources and new insights on searching topics that I wouldn't think of.
4.	The EPA library provides me and other EPA staff no-cost access to industry standards which are referenced by EPA regulations.
5.	Providing access to texts not available elsewhere.
6.	Provides access to standards that I use daily.
7.	I am in [the] learning process . . . to utilize our library. Just requested an article search. In the past I searched for articles myself and I would request them. For the registration review of pesticides, [it] would be nice if library would provide us with a set of articles for the chemical scheduled to be reviewed prior [to when] we start working on this chemical.
8.	Helps me gain a deeper understanding of any subject area.
9.	I use the library to request papers from journals the EPA does not have access to, but I do not use library services to help me research. My research is too technical.
10.	Access to subscription journals.
11.	EPA Headquarters and Chemical Libraries and the "Ask a Librarian Reference Service" have been super helpful when I couldn't find a document online. I didn't think it existed, yet they found it!
12.	Obtaining research articles that EPA does not subscribe to.
13.	Gives me a quiet place to concentrate on my work.
14.	Being able to talk to a librarian directly to understand what I may need. Sometimes, just being able to express what I need in terms of research and help is extremely important. Also, having access to books to read for pleasure, but that are pertinent to my job is extremely important.
15.	Provides references that I am looking for.
16.	I've never asked for analysis or decision-making support.
17.	Access to other library services, including library network databases, assistance with obtaining parcel/mailing information, and MOST IMPORTANTLY a quiet and secluded workspace.
18.	It helps me stay current on the state-of-the-science in my field.
19.	The library maintains a technical resource of books, journals, encyclopedias vital to EPA mission of protecting human health and the environment.
20.	Knows about resources that I don't.
21.	Provides access to publications that are not typically available.
22.	Ability to access recent scientific journal articles to help support decision-making and to better understand rapidly changing scientific field.
23.	This question appears to have no understanding of the services offered! The librarians are not generally permitted to sort and analyze data, only find it and provide it . . . at least for the contract here. Very bad questions.
24.	Knowledgeable librarian directs me to sources of information that I otherwise would not know about.
25.	Staying current is important. Books and personal knowledge are not enough. The truly current ideas are in magazines and internet write-ups. We need fresh ideas to solve old problems.
26.	Assist library patrons.
27.	Provides convenient and easy access to resources through the interlibrary network as well.

No.	Response
28.	The regional library is a space opened to the public and creates an interface with those most interested in the history of the agency, scientific journals, and media information all in one spot. It is a very uniquely dedicated place of environmental information not found in any other location in the entire large geographic area the region covers. This focused and dedicated resource is not available, free of charge, and open during regular business hours for students, industry, legal researche[r]s, and media representatives to use.
29.	I use the library most often for business information requests (Reference USA, Dun & Bradstreet, etc.)
30.	I generally use the librarian's services to get journal articles that are not free, that I need to evaluate air pollution controls, or to evaluate air pollution monitoring systems. They can quickly reach out to other librarians, and not just within EPA, that may have ideas on where to locate the information I need. Most of my work is technical, so I analyze the data/information myself.
31.	Keeps me apprised of the latest developments in the emerging field of my expertise.
32.	Book club.
33.	Access to articles in scientific journals that do not provide open access.
34.	Gives me access to literature, both through online, digital library access. and interlibrary loan.

Question 5. Information Management and Publishing

Question Text: "Please describe why you gave EPA's libraries a 'Fair' or 'Poor' rating on any of the previous questions."

Table 23. Question 5 Free-Form Text Responses

No.	Response
1.	Generally, we don't have a real library or trained librarian.
2.	The library has a limited set of journals that are accessible. The journal subscriptions are not comprehensive to cover the fields that I need to access (e.g., physics, chemistry, combustion, instrumentation).
3.	I don't really ever use the library.
4.	I think the library services are always improving, I telework and was . . . off and on in the last 6 year[s], and did have difficulties to figure out how and where I get articles, what changes were made in the library operations, and training. Since work has to be done smoothly and on the fly sometimes, we need to know how to use the library to maximize our work outcome, so a short training, max 5 min., on updates on your website would be great. Video training would be best, like a YouTube [video,] short and sweet.
5.	None were rated fair or poor—one was no opinion because I have not had enough variety of access times to judge it.
6.	I did not know these tools were available from the library. I've never taken any trainings before, and didn't know the library did analyses.
7.	Probably skewed by my time at National Cancer Institute, where pretty much all medical and health literature was available online. This type of information seems to be an afterthought at EPA.
8.	The library takes a long time to get papers to me (5–7 days) which delays my work product. I have never needed to interact with library staff so I cannot answer the other questions.
9.	I am not located at Federal Triangle, therefore I do not use the EPA library. I abstained from most of the questions for this reason. Also, I have tried to use the online version, but found that to be poor in resources.
10.	I didn't rate anything fair or poor. In some cases I had no basis to judge since I didn't use the particular services.
11.	All the services I have received from EPA libraries are EXCELLENT. I did NOT give a fair or poor rating in any of the question[s]. I choose no opinion for some questions because I do not use those particular library services.

No.	Response
12.	This location has [not] had any advertised training sessions. (And I don't know if any are available one-on-one personal sessions.)
13.	Limited online holdings. Waiting days for a publication [to be] available online. More often I get better access and faster responses to requests for scientific publications by reaching out to colleagues working at universities.
14.	No training, outreach, open houses for our regional EPA library.
15.	Limited open hours, limited holdings in house.
16.	The majority of the books on the shelf appear to be 30 years out of date. There have been no training sessions in recent years.
17.	Library hours are more limited than EPA working hours.
18.	Many training sessions are only theoretically useful. By the time an actual use case arises, I will have forgotten the training. Therefore, the usefulness of the training is only fair.
19.	Lots of no opinions because I am in Wheeling and rarely interact in person with library staff.
20.	Generally the[y] do not have the information I need to support business decisions. Most of the focus is on the environment and very little business information. Also, the staff does not appear to be well versed in tools for business but probably are very well versed on environmental research.
21.	I've had a few specific legal document requests/searches that my region is no longer equipped to handle since letting go of the legal librarian. One general librarian cannot adequately help a legal office.
22.	Not having the latest information in the library, no fault of the staff.
23.	Library hours are not a full 8 hours and have gotten even shorter recently. Librarian does not use all research tools that other librarians have used before.
24.	Some of the material that turns up in response to a request is very old.
25.	Not applicable. Without the library services, I would not be able to acquire the information I need to make informed decisions or recommendations.
26.	Many of the books on the shelf are older and somewhat outdated. Also, I've never been able to remotely access library services.
27.	Regional library not open h[ou]rs per day/every working day (Monday through Friday).
28.	I gave a no opinion or not important rating for the previous questions. I don't use the EPA library.
29.	I use the library because I have been very successful with [the] reports I [have] gathered.
30.	Lexis search seems to be an easier way for researching legal issues.
31.	May not have used the service(s) much.
32.	Operating hours are a reason for me not having access to what I need at times.
33.	Due to limited library hours, I'm not able to access the library at times that may be most convenient for me.
34.	I don't use the libraries—I haven't found them useful. The librarians are by no means bad people, but the service is not of any use to me.
35.	Limited hours and telework access, which is to [be] expected.
36.	Library closes much earlier than my work day.
37.	Library only has funding to stay open Mon–Thur. It would be great if they had funding to stay open Mon–Fri.
38.	Access to library services (except interlibrary loans) from my alternate work site is severely constrained when I use my personal (rather than EPA's) computer. This is not the library's fault; network access is limited by PC Support for cybersecurity reasons. But it would be nice to be able to access journals from my alternate work site.
39.	Poor for off-campus retrieval because after updating to Windows 10, I cannot figure out how to remote connect my work computer. This is more a reflection of IT, than the library.

No.	Response
40.	I gave one good rating because once I went to check out a book that was in the system as located in the library and it wasn't able to be found. Another time I had requested a book that was due in the library and it took me reaching out to the librarians about why I hadn't received the book yet for them to take action in procuring the book.
41.	I only access from intranet for training so never dealt with on-site staff.
42.	I have never attended a seminar or webinar hosted by EPA's libraries because I have not seen any notifications.

Question 9. Other Potential Services EPA Libraries Can Provide

Question Text: "Thinking broadly, are there other services with which you think the EPA Libraries can be helpful as we move into the future? Please explain."

Table 24. Question 9 Free-Form Text Responses

No.	Response
1.	I would like to have access to actual trained librarian with research capability.
2.	Some of us, while technically competent in our specific fields, aren't even aware of the technology advances that could improve our ability to tell our information effectively. Perhaps have the library be a center where they actively seek out regional staff interested in very basic introductions to some of these technological opportunities.
3.	Access to a larger set of journals and books.
4.	Please expand the access to journals covering emissions from transportation sources (SAE, MTZ, ATZ, etc.).
5.	Improved capability for accessing PDFs of present and past journal articles. Increasing access to journals with emphasis on transport and transformations of chemicals and pathogens in the environment.
6.	Training on how to better disseminate EPA information to the public.
7.	Document/publication editing/formatting, this has been hard to find recently.
8.	Everything is digital. I have used library services to keep up to date on my research topics, this was a good service.
9.	Yes, I think navigating data depositories and metadata resources will be very helpful!
10.	Incorporate artificial intelligence into systematic review in order to streamline reference gathering for a particular subject/paper. For example, a query should be able to identify seminal papers and impact papers that move the field forward as opposed to menial papers that are loosely associated with a subject and questionable as to their direct contribution, which dilute any particular batch of search results.
11.	None. Our librarian is very good at finding resources that are not currently in the library.
12.	Personally, I use the library most to find species-level taxonomic keys for organisms I am trying to identify. Many of these papers are out of print or hard to find. At the same time, I am also look[ing] for the most up-to-date taxonomic keys available.
13.	Mostly, let the librarian be a part of a chemical team. S/he learns what we do via rotation/a day or two, and provides us with the articles on chemicals that will enhance the chemical risk assessment. For example, BEAD provides the pesticides labels, and you provide the major articles pertaining to the chemical fate from the date of [the] last risk assessment.
14.	Our division has many systematic reviews that we do throughout each year. It would be valuable for libraries to understand this process and offer more than just database searches as part of the services. Text-mining and sorting based on exclusion/inclusion criteria are very time-consuming and our division is hard-pressed to take on the job. Library support throughout multiple steps would be incredibly valuable.
15.	Understanding new publishing formats.

No.	Response
16.	Having additional resources for library so that the articles can be quickly retrieved instead of waiting through interlibrary loan.
17.	Programmatic knowledge management support services, both from a research/literature perspective (curated topical bibliographies that are regularly updated), and from the programmatic perspective in terms of gray literature and other sources provided by a program but maintained and organized with librarian support.
18.	Provide orientation to all employees. Including ORISE and ASPPH fellows. I'm an ORISE and would have benefitted from a brief overview of library services when I first started working here.
19.	Interagency agreement to share resources with NIH library.
20.	I just need papers that I found on the internet delivered to me faster. I have no need for library staff. They are not technically trained enough to mine data for me or search the literature.
21.	Keep up the good work.
22.	Endnote, SciFinder training.
23.	Ensuring access to critical information sources is key to our success in research.
24.	The federal government pays for nearly all work performed by researchers at university through grants. The publications from those researchers should be free to access. NIH, NIST, DOD/ARPA-E/DARPA funding should include a stipulation that any publications resulting from grant funding cannot be behind a paywall.
25.	Provide assistance in accessing environmental regulations and guidance from European environmental agencies (e.g., REACH program).
26.	Allowing the librarian access to more paid subscriptions which could be very helpful to regional employees: CLEAR, Standard and Poors, RMA, Bloomberg, etc.
27.	Advertise more actively when a book of high demand or interest becomes available and encourage employees to read as a tool to become better professionals. Increase the advertisement of the library services for field office employees. Field office employees do not have physical access to the library services and sometimes that barrier affects the employee library services usage rate. Love that the library is looking into getting more involve[d] in collaborating and encouraging research.
28.	Language lab space for our bilingual region to advance Spanish speaking in the workplace. Very important in Region 2.
29.	Please subscribe to Engineering News Record.
30.	Better access to GIS and other similar technologies to see on a bigger computer screen space to analyze.
31.	The library has been helpful enough with the services it currently offers.
32.	Other than access to *American Scientific* articles, we would like to get access to engineering & technical articles such as chemical engineering magazine websites, also some previous scientific and technical articles are hard to gather from other libraries, some PDF formats are good, others are obtained in very poor quality from other libraries.
33.	More online journal access and help with e-publishing of articles.
34.	They already train and assist with research in a wide range of areas. I need that help. I hope it will continue. As the quantity of information and data continue to grow, research, analysis, and helping to provide context will be an ever-increasing need at EPA.
35.	Physical collections of useful materials: Region-specific macro-invertebrate collections, mineral/rock type/drill core specimen collections, region-specific county parcel maps/shapefiles.
36.	Maintaining the aerial photograph reports produced and stored by ORD/OECA and others; specifically, the reports and aerials produced for sites for each region should be maintained in each region's library, especially since the group current archives nationally does not appear to be happy about the cost of doing so.
37.	Possibly organizing electronic records.
38.	Publishing R code and data with publications; guidelines and help publishing GitHub projects.
39.	Nope. The librarians are very helpful. They always respond to my requests in a timely fashion and with a smile!

No.	Response
40.	Expanding resources on team building, leadership, collaboration.
41.	Facilitating the review and publishing of EPA-authored web documents through EPA's website.
42.	I would like to see more business and economic information available.
43.	Legal research. Our attorneys are at a disadvantage to outside counsel by not having legal-library-specific support.
44.	Ability to assist with finding, interpreting, matching, and copying Quadrangle maps.
45.	I have benefitted tremendously from assistance with literature searches out of the Cincinnati library. I think most staff are unaware that they can ask for that help. However, they do not have the ability to filter the results. For instance, if I am only interested in North American stream studies, I currently get all global studies, which I then have to sort through. I think the libraries could assist with training on citation managers to manage large numbers of publications used as references. They could help EPA staff do a better job of using those tools in our work. They could coordinate with U.S. Fish and Wildlife Services to help coordinate searches in databases used by them when we have to consult on the Endangered Species Act.
46.	Keep technical books and journals, please do not discard or give away. Some subjects like iron and steel and pulp and paper manufacture have publications from earlier decades that are vital to understanding that sector of manufacturing and are out of print. Please keep them, don't throw away or discard.
47.	Social media connection[s] (PR), book signings.
48.	It would be helpful if each region had a separate law library with [a] good law librarian.
49.	Librarians with legal expertise.
50.	The world of the internet, books, journals, etc. is so vast and overwhelming now that it is somewhat overwhelming to me if a topic I'm working on needs to be researched. It would be helpful if I could pose a certain research question to a librarian like, "Find all the incidents you can of locations of harmful algal blooms in the southeastern U.S. over the last five years" and they would assemble what they could. Maybe we can make that type of request now already, I'm not sure, but that's the type of service that would be helpful to me and I imagine other EPA staff.
51.	Just please do not stop providing ILL services.
52.	More resources are needed to determine potentially responsible parties' (PRPs) viability, as well as a database that would aid in locating PRPs.
53.	Without the library services, I would not be able to acquire the information I need to make informed decisions or recommendations.
54.	Helping our external partners when the need arises.
55.	Gather studies and such from other agencies, including [those in] Canada.
56.	Additional environmental journal subscriptions would be helpful, or access to them.
57.	I need to check the Library Bulletin more often to find new articles or books on water issues that in the past came to me as email.
58.	Interlibrary assistance is extremely valuable and should continue. The webinars on how to effectively use the services should be done and recorded for reference. International information is difficult to find, increased access would be good. Translations would be useful for articles and conversations
59.	We could use a good database on the communities [where] we have projects/sites to have a better understanding of what other environmental challenges they are facing (or have faced in the past).
60.	Archiving historic data, materials, photos, hard-copy reports, periodicals, books, films, etc. Even if the data is now available in digital form, I want to have a hard-copy backup. Accessing the digital version depends on access to the fast-changing technology that can read it. Hard copy is more reliable over time and essential as a backup.
61.	Access to literature and peer-reviewed publications (subscriptions to online search engines) for support in doing the searches, screening the results, and having rights to open publications from our desks because of EPA's subscription to services.
62.	Our library is fabulous. They call me often with questions from the public and I enjoy working with them.

No.	Response
63.	In my work (technical support), the Region 9 librarians are an integral component of my research team. However, regional offices are more regulatory with very little research needed. The expertise/knowledge of the program is the responsibility of the project officer. Big question is how to integrate the library into EPA regional activities.
64.	I appreciate the ability to call and discuss my needs with a librarian.
65.	Access to research tools, publications, and resources that are expensive for each employee to have.
66.	Maintain inventory of books on general interest environmental topics, such as environmental history, air and water quality, global warming, habitat reduction, etc. R[egion] 9 library has a small collection [which] should be supplemented, and [the] availability of the books should be advertised (e.g., through occasional email notices).
67.	Ability to link to other libraries' (government agencies/universities/nonprofits/newspapers, etc.) catalogs/journal holdings easily (simple user interface) so staff can search themselves, or contact a librarian to perform the data mining for them.
68.	It would be helpful to have EPA libraries be assigned duties to assist with EPA website updates and respond to the more general public enquiries.
69.	Working together to provide resources/literature on particular topics.
70.	I know we have subscriptions to many e-news services but I am not clear how to access them. When I get an email with an interesting environmentally related story, I often can only read the first two paragraphs and then don't want to take the time to track down how to access the rest of it. I would appreciate an icon on my desktop [that] I can hit showing all of the news services we can access, so I can quickly go the news service I want. Thanks.
71.	Financial research.
72.	I enjoy the services from the EPA library. I [have] no further comments on what additional services should be provided.
73.	I work on criminal investigations, so the information I deal with has to be held closely. I have found the library staff very helpful in obtaining background publications to back up the positions I have to make in my reports.
74.	The ILLiad service is wonderful (and amazingly rapid), but some libraries only provide a scan of the article, which precludes word searches. It would be nice if this could be fixed. Also, mining journal article texts will become more important.
75.	Make detailed literature search[es] using multiple databases available at your desktop.
76.	Keeping updated lists of references for different topics.
77.	Data mining. Text-based informatics searches of technical publications for systematic literature reviews.
78.	Searchable list of properly formatted endnote references for EPA and other government reports/documents. For example, with author listed as "U.S. Environmental Protection Agency," including comma so that [the] endnote will use the full agency name instead of trying to abbreviate.
79.	Better/more complete access to online journals.
80.	EPA needs to negotiate a "treaty" with DOD so that EPA can have access to "restricted" materials in the DTIC database. DOD remains convinced that EPA does not have or understand the strict requirements the military has for restricted/classified documents, so we cannot access these documents when they are needed except through one of our friends in the military. I'm not sure what it would take to accomplish this—maybe sweeping changes in EPA procedures, maybe negotiations at the highest levels, etc., but I have been very frustrated by this restriction on the DTIC documents more times than once, and I cannot speak for others.
81.	EPA libraries can help explore alternative metrics to measure the success (i.e., impact or influence) of a research project or program over time. Currently in ORD, where I work, we perform accountability checks annually by examining the number of deliverables received and comparing that to the number expected per our strategic research plan. Nothing about this measurement tells us how well (or poorly) EPA's research is being received.

Question 11. Most Relied Upon Information Types

Question Text: "Please select up to five types of information that you rely on most often for work activities."

[Table 25](#). Question 11 Free-Form Text Responses

No.	Response
1.	Library Services: Interlibrary request for the book and articles.
2.	Most specifically, I look for journals and/or books containing taxonomic keys for aquatic invertebrate identification.
3.	My work is more general, so information, journals, organizations that talk about the examples of research and projects being done in a wide range of EPA-related areas is my greatest interest.
4.	Environmental science books; books about technologies such as GIS.
5.	Dun & Bradstreet reports.
6.	Dun & Bradstreet reports.
7.	Historical information including news articles, maps, trade publications, gov[ernmen]t publications, etc.
8.	LexisNexis.
9.	Grantee and contractor deliverables.
10.	Books and periodicals.
11.	Access to state and local data, and for international work, access to other countries' data.
12.	Material for special events—books and films for special topic discussions.
13.	Access to standards (such as ASTM standards) is especially important; please be sure to maintain this access for EPA staff!
14.	Court records.
15.	Survey data.

Question 12. Resources Difficult to Find or Access

Question Text: "Please list any databases, print sources, or other information resources you need but cannot find or access."

[Table 26](#). Question 12 Free-Form Text Responses

No.	Response
1.	It would be nice to have access to more books and electronic access/subscriptions to more peer-reviewed journals.
2.	Society of Automotive Engineers' standards and procedures.
3.	American physical society journals, combustion institute publications, American chemical society journals, NIST thermos tables.
4.	Bunkerworld computer-friendly version of U.S. Code.
5.	ISO engine and vehicle emissions measurement standards; UN/ECE engine and vehicle emissions measurement standards; journals covering advanced internal combustion engine emissions topics, such as MTZ and ATZ.
6.	Regional studies, economic systems research.
7.	Scopus.
8.	We have access to ASTM, but I'd love to have access to ISO and ANSI QA standards.
9.	We need better access to social science research. I am glad that GeoForum is in our library.
10.	I would love to have digital access to entomology journals beyond what is currently available. The *Great Lakes Entomologist* (past 2015), *Canadian Entomologist*, and *Zootaxa* would be of interest!

No.	Response
11.	Access to water-monitoring data (surface, ground, drinking), [as well as] soil and air monitoring data would be nice to have. It is often challenging to extract the monitoring data.
12.	Journals articles.
13.	I have been able to get to everything directly or through ILL.
14.	NIH Library resources.
15.	Soil Science Society of America journal *Catena*.
16.	Various scientific journals (ACS publications, etc.).
17.	I'm relatively new and haven't tried searching for much yet (so I don't know what is or is not available).
18.	So far everything I have needed I can access either through my AA's databases or the EPA library resources.
19.	More journals from the American Chemical Society would be nice to have.
20.	It's being created now, nanotechnology databases or nanoinformatics.
21.	Older books and theses can be difficult or impossible to access.
22.	There are a vast number [of] scientific publications out there. Often I'm searching for very specific chemical information. Whichever journal happens to have relevant articles is arbitrary.
23.	Standard and Poor's, credit resources, RMA Bloomberg, Reuters.
24.	Subscriptions to E&E news, *Economist*, *Wall Street Journal*.
25.	Fish and wildlife electronic atlases or GIS layers.
26.	Up-to-date texts on fields like limnology.
27.	Technical publications such as *American Scientific* and engineering [publications] such as *Chemical Engineering*.
28.	Public health journals or medical journals.
29.	Certain HR or management journals.
30.	All region-specific county parcel information (available but spotty).
31.	Aerial photos.
32.	99% of journal articles I need but can't access instantaneously can be accessed through a library request.
33.	Economic reports on different industries such as hazardous waste disposal, facilities management, etc.
34.	Kovel.
35.	Locations of NRCS projects to address sources of non-point source pollution.
36.	LexisNexis, Mergent.
37.	*Chemical and Engineering News*.
38.	ASTM specifications.
39.	Small-town newspapers.
40.	I never learned to use outside databases. I would if I knew where I could use it.
41.	When it exists but not in our library, our librarian has been able to request from somewhere else.
42.	LexisNexis.
43.	*High Country News*—full versions, for keeping up on regional current events. Advanced Adobe software to help with adopting information on long environmental impact statements.
44.	RMAG (Rocky Mountain Association of Geologists) publications.
45.	USFWS biological databases, European Union scientific and environmental status reports, WHO information, U.N. reports and information, hydrology and hydrogeomorphology journals, AWWA, AWRA webinars and publications, ELI trainings.
46.	Local water-quality data collected by developers or at the county level.
47.	States' water- and air-quality data, states' and other federal agencies' GIS data, states' and other federal agencies' publications.
48.	It used to be harder to access LexisNexis and Pacer but these have become easier.

No.	Response
49.	If I can't find a database, I go to the librarian (e.g., our lawyers have access to LexisNexis but technical staff do not—so if I need it, I go ask the librarian to access it).
50.	I sometimes need scientific articles or publications that I cannot find/access on the internet; the library has always been able to provide them to me upon request.
51.	CLEAR.
52.	Access to journal articles and peer-reviewed publications (access provided through ORD, but not at the regional office).
53.	Sometimes there are journals that I cannot access but I've always been able to access the articles I need through EPA libraries.
54.	A long list of journals, particularly statistical journals.
55.	*American Journal of Epidemiology*.
56.	There are a number of scientific journals that require a fee payment to access.
57.	Several journals pre-1990s; too many to list.
58.	*Nature Climate Change*, *Nature Energy*, *Applied Energy*.
59.	I need different resources at different times—sorry to be evasive, but it's not always the same literature sources that I need.

Question 13. Patrons' Practices in Locating and Obtaining Information

Question Text: "Please indicate how often you use the following approaches to finding information for work."

Table 27. Question 13 Free-Form Text Responses

No.	Response
1.	Often use SEE to check with library.
2.	Interwebs.
3.	Library could play a fantastic role in streamlining our risk assessment work. Provide summaries of articles and extracted monitoring data (water, soil, and air).
4.	The "Ask a Librarian" reference service has been very helpful.
5.	More often I get better access simply by sending the DOI link for a publication to friends in academia than by requesting the same article via EPA library.
6.	From other members of a cross-programmatic team.
7.	Almighty Google.
8.	Ask other experts in the scientific field.
9.	I've found searching on the internet and online is highly dependent on the search terms you use. Google's power-search class is helpful (https://coursebuilder.withgoogle.com/sample/course?use_last_location=true). Several years ago, EPA's search engine was not very good and I would advise people to use Google and limit the search domain to "site:epa.gov" instead of using EPA's search engine on its home page.

Question 14. Frequently Used Information Sources

Question Text: "Please indicate how often you use the following sources to find information."

Table 28. Question 14 Free-Form Text Responses

No.	Response
1.	I don't do it often, but library personnel were able to get interlibrary loans of materials that were critical to a recent project . . . I would not have been able to finish the project without this assistance.
2.	EPA intranet search function is basically useless, so I rarely use it.
3.	I use Google Scholar routinely when searching for publications. It is tremendously helpful that because of EPA's agreements with most publications, I get ready-access to them. When I can't get access, I call our local librarian who helps me get it.
4.	EPA Region 9 librarians provide/assist in identifying online and obscure references.
5.	The EPA intranet search engine is not effective.
6.	Web of Science—I get to it via the EPA intranet, but it is not an EPA source, so it is not clear whether it counts as part of "EPA Internet/Intranet."

Question 15. Effective Ways of Learning about New Information Sources

Question Text: "Please select the three most effective ways you learn about new information sources related to your work."

Table 29. Question 15 Free-Form Text Responses

No.	Response
1.	Reading journal bibliographies and publisher-provided bibliographies of journal articles.
2.	Through journal articles that I am asked to review.
3.	Conferences.
4.	Twitter, university nearby.
5.	Reviewing journal articles.
6.	I used to use ScienceDirect, and then requested articles of interest from library, but it takes time, in particular if there are too many hits, and mostly not of value. Recently, I requested a library search, which I will go over soon. There are many hits and many articles to go over.
7.	In-house technical workshops/presentations from colleagues or outside contractors (regular remedial project manager meetings).
8.	Google Alerts, Google Scholar searches.
9.	Other federal agencies.
10.	My own literature searches via Google Scholar.
11.	Lack of resources can be suspicious. The real state of Puerto Rico and the real amount of pollution from oil wells is not covered very well.
12.	Internet searches, non-social media program resources.
13.	National trainings and teleconferences.
14.	Conferences.
15.	EPA, state, federal agencies, and other professional association webinar series; university research groups such as water research centers; other federal agencies such as USGS and USFWS; and groups at universities such as CUASHI.
16.	Requests for books and periodicals through interlibrary loan.

No.	Response
17.	In R[egion] 9 we seldom receive email notices about library services; I would welcome occasional email announcements from the library to keep apprised about available services.
18.	EPA 30-minute webinars—highly packed info in a short time. 30 minutes is perfect.
19.	Articles or reviews in journals.
20.	ResearchGate.
21.	Web of Science.

Question 17. Functions Library Staff Could Perform to Save the Patrons Time

Question Text: "Please indicate which of the following functions library staff could perform to save you time."

Table 30. Question 17 Free-Form Text Responses

No.	Response
1.	Help with bibliometrics.
2.	Provide a brief training on how to use effectively your resources available to us. Provide research of articles for upcoming risk assessment[s].
3.	Assistance querying and managing large datasets.
4.	Requesting books or journals from external sources.
5.	A conversation as I begin my research would be helpful—I've never asked for this help, but am confident our regional team would help me if I asked. In fact, that's a very good idea. Thank you!
6.	Unfortunately, I think I underuse the resources available at the library. I just don't think to ask and instead try to do it myself.
7.	Filtering out the results of large literature searches. For instance, narrowing results to geographic locations, water-body types, etc.
8.	ILL.
9.	I have all these services from the librarian. The difficulty is asking the right questions.
10.	Developing a program-specific, but environmentally relevant region-specific publically accessible blog for environmental impact planning and mitigation.
11.	Maintaining calendars with subject-specific opportunities for learning such as webinars, local workshops, single-day training, conferences, etc. Maintain a list of available opportunities for attending meetings that EPA is sponsoring or has been invited to attend, allow regions to attend meetings, not just HQ.
12.	EPA region librarians do regularly scheduled searches on my topics of interest, identify and provide resources, and one-on-one research consultations for and with me.
13.	I work on criminal investigations, so my needs are unique to each case. If I identify a publication that may provide background information for an investigation, the library has often been able to obtain the publication through interlibrary loan—often in a day or two, which is greatly appreciated.
14.	Many of my questions end up being about weird acronyms that people use; it would be neat if the library could compile the most used acronyms at the EPA to make onboarding easier.
15.	I know you already do perform regular searches and colleagues have taken advantage of this service; I have never done it but maybe I should!!

Question 18. Frequency of Use of Information Sources

Question Text: "Please indicate how often you use the following information sources for your work."

Table 31. Question 18 Free-Form Text Responses

No.	Response
1.	Google Scholar, Web of Knowledge, internal search with endnotes to other databases.
2.	Google Scholar.
3.	NTP historical control database, EPA Chemistry Dashboard, ChemIDPlus, OECD QSAR Toolbox, EPA DSSTox, ECHA, EPIWEB.
4.	ORD STAR grant publications.
5.	Publically available datasets.
6.	Other websites not affiliated with EPA.
7.	HERONet.
8.	Whatever I can use on the internet, often found by searching on Google.
9.	Manufacturer and vendor websites, technical libraries, product safety information.
10.	Google search, Risk Assessment Information System (RAIS), EPA's Integrated Risk Information System (IRIS), EPA's Ecotox database.
11.	Email newsletters delivered to inbox frequently summarize new info sources, published reports, etc.
12.	Most questions just not applicable to me. I do not do formal scientific research. My role is communication and coordination with EPA employees and external partners.
13.	Also downloaded electronic copies of guidance or info onto electronic device (Kindle) for easy portability in field where internet or network access may be unreliable.
14.	Historical newspaper articles, historical aerial photos.
15.	The scanned-in database of old documents is horrendous. It never gives me useful documents based on my search query. Ever.
16.	Use Google to perform searches for different product types, equipment, and concepts.
17.	Kovel.
18.	LexisNexis.
19.	Websites of other federal agencies including HUD, NIEHS, ATSDR, CDC, Census.
20.	Electronic Code of Federal Regulations.
21.	ECFR.
22.	State public websites.
23.	Other federal and state agency websites.
24.	Google Scholar.
25.	LexisNexis, Pacer, Federal Register website.
26.	Electronic air pollution regulations from states and local agencies.

Question 20. Obstacles to Finding and Using Information

Question Text: "Please indicate the extent to which the following factors are problems or obstacles to finding and using information for your work."

Table 32. Question 20 Free-Form Text Responses

No.	Response
1.	Staffing is 24 hr/wk; would like to see staffed 30–40 hr/wk.
2.	Your survey just became way too long!!!
3.	Lack of online access to a broad swath of scientific publications. Often required to submit a request for a publication to the librarian, then wait days while I forget why I was looking up the information in the first place. Easier and faster to simply ask a colleague in academia for publications using the DOI link.
4.	Too much information can make it difficult to do searches.
5.	I have no issues with the library or library staff.
6.	Most of the time library staff are able to find full text through ILL even if we don't have a subscription. However, when full text is not available, that is a major problem. The question regarding full text is confusing.
7.	I used to be able to readily locate information on the EPA internet/intranet, but since it was reorganized to assist lay people with finding information several years ago, locating technical information on the EPA internet/intranet is much more difficult/problematic today.
8.	I haven't tried accessing the EPA intranet from offsite. If it isn't available, then it is a major problem. Having a little later hours would be nice, but it is understandable if that isn't possible.

Question 21. Patrons' Departments and Functions

Question Text: "Please indicate your primary functional area or department at EPA."

Table 33. Question 21 Free-Form Text Responses

No.	Response
1.	R&D/Science: Quality assurance.
2.	Director of QA.
3.	Student analytical chemist. My job is not as research-based/library-dependent.
4.	Contractor providing research support/science services.
5.	Program analyst (financial).
6.	It's probably under regulation, but its science too.
7.	Water security.
8.	Onsite environmental health and safety, waste management.
9.	Law.
10.	Grants.
11.	Permitting.
12.	Regional water quality standard.
13.	Acquisition & contracts.
14.	Not all science jobs are R&D. Most of us in the regulatory field consider ourselves scientists, but we're not in ORD doing research. We need the technical information to apply the science.
15.	Records management.
16.	Human resources.

No.	Response
17.	Water data analysis.
18.	Regulatory.
19.	Suspension and debarment.
20.	Chemist.
21.	Regional laboratory (could probably group as R&D/Science).
22.	Scientist (but not in R&D).
23.	Environmental planning, mitigation, disaster recovery.
24.	Maintaining drinking water information database.
25.	Science/technical support.
26.	Regional program scientist.
27.	FOIA.
28.	CWA nonpoint source program implementation and watershed restoration projects.
29.	Not sure—I am a physical scientist in the NPDES Permits Office, and am involved primarily in regulatory implementation (though also regulation development to a lesser extent).
30.	Grants.
31.	Legal.
32.	Review and approve local air pollution regulations to be federally enforceable.
33.	Air and waste program implementation.
34.	Cost-recovery and PRP searches.
35.	Document and file organization.

Question 22. Patrons' Employee Status

Question Text: "Please indicate your employee status."

Table 34. Question 22 Free-Form Text Responses

No.	Response
1.	SEE.
2.	ORISE postdoc.
3.	ORAU graduate fellow.
4.	ORISE.
5.	SEE grantee.
6.	SEE.
7.	Postdoc.

Question 23. Additional Comments Regarding Information Needs

Question Text: "Please provide any additional comments you would like to share regarding your information needs."

Table 35. Question 23 Free-Form Text Responses

No.	Response
1.	We need more library and database services to support research. We are relying very heavily on Google Scholar and random internet sites right now. God, please don't let OSIM lead anymore; they will totally screw it up like everything else they do.

2.	The library services at the EPA facilities in Cincinnati (AWBERC) and Ann Arbor (NVFEL) are excellent and often are superior to nongovernment professional and academic services with which [I] have had previous experience.
3.	EPA's library staff rock!
4.	Need access to ISO standards and methods.
5.	Our library and librarian here in Duluth are excellent.
6.	The major newest articles summarized on chemical fate and monitoring (water, air, soil) since last risk assessment for each upcoming risk assessment is the goal.
7.	It would be great to have a physical library/reading room again.
8.	I would definitely be interested in learning more about the tools the library has to offer. Thank you for this survey!
9.	Would LOVE to have work access to NIH library resources!
10.	I am relatively new to EPA and haven't used library services much. I think the library website could be better organized and I'd appreciate greater clarity around the journals, etc. to which we have access; but I generally have been pleased with the assistance I've received when I needed to find EPA documents that were otherwise difficult to find.
11.	The librarian at Las Vegas is very good at tracking down references for me if the EPA does not have them. I could not do this on my own.
12.	I love the library; staff is top-notch and excellent quality work.
13.	I am not really the one to take this survey—I use the library & staff to find things maybe once a year. I don't use the library enough to have relevant opinions.
14.	I really appreciate the library resources and am glad to see renewal of these services.
15.	Having a functional library with librarians ready to help is a huge asset to the agency. For enforcement we need to be up to date on all things legal. Our library should have the resources we need to make sure we do our best job! Thank you.
16.	Region 3 librarians are wonderful and extremely helpful.
17.	EPA libraries are a necessary resource for the proper function of the agency and deserve the appropriate funding and resources to allow them to remain the irreplaceable service that they currently are.
18.	Reg[ion] 3 library staff is great. Industrial directories (historical) could be built up more.
19.	Not knowing what is available and not having the time to find out (heavy workload) is a problem.
20.	Better access to company information—sometimes D&B reports are incomplete and other company information that can be found on the internet is generally inconsistent/unreliable.
21.	Information about training or technical presentations by professional organizations offered via the web might be useful. For example, I recently read that AGU (American Geophysical Union) will be broadcasting a few sessions during an upcoming national meeting.
22.	I think that there should be more general training for the scientific staff in the core EPA programs on the basics—how to use Google Scholar with EPA subscriptions, how to use [a] citation manager, how to request literature searches, etc. Basics. There should be a form to fill out for literature searches—I've asked if there is one and was told no. I like the idea of having librarians be assigned to projects. That'd be cool.
23.	The Region 4 EPA library is great. Joshua Grimes does an excellent job providing library assistance.
24.	I like the library and its service. This reminds me to take advantage of them more often.
25.	The EPA library staff is doing an excellent job and is needed.
26.	Often the librarian is able to locate key information that significantly assists in enforcement and cost-recovery efforts.
27.	I have used [the] library services many times over the years. However, by taking the survey I have learned that the library's services are much larger than I had previously understood. I spend a lot of my time researching and collecting information. If I use library services as described in the survey, I would save a lot of time. I wish I had realized all of the resources that were available to me and utilize[d] them over the years. Now I know where to go to when I have a problem to solve. Thank you for producing the survey because I gained more information than I had anticipated.

No.	
28.	The R[egion] 5 Library is excellent!
29.	A lot of great ideas for future possibilities, but how will we be able to pay for any of that?
30.	Library is essential, R[egion] 6 librarian is very helpful.
31.	The librarian is the key. I have gotten material from all over from the efforts of the librarian. The possible subjects are very widespread.
32.	Staff need to continue to be educated about the benefits of a library while we are in the heat of needed information. That is a key time we forget.
33.	The library is a very valuable resource I hope the agency maintains for employees.
34.	Truth. Science-based policy.
35.	The library and their services are essential to provide current and up-to-date information for use in writing conditions and best practices req[s].
36.	The EPA libraries' hard-copy collections of books, reports, and periodicals are extremely important—please keep them available!
37.	Suggest supporting and possibly combining GIS support center and library as both are critical to acquiring, understanding, and presenting information.
38.	I have been very please[d] with the service in R[egion] 9.
39.	The librarian staff are always friendly and helpful.
40.	The library provides me with significant historical materials [that] I use regularly to do my job.
41.	Usually need to ask librarian to find copies of journal articles. Thanks for being helpful to get those journal articles.
42.	I really appreciate the onsite EPA library and consider our librarians to be extremely professional and helpful.
43.	Excellent staff serving the needs of many EPA staff.
44.	The EPA library and information retrieval serv[ic]es are essential to my work. Thank you for this service and contribution.

Question 24. Additional Suggestions for How EPA Libraries Can Deliver Better Services

Question Text: "Please provide any additional suggestions for how EPA libraries can deliver better services."

Table 36. Question 24 Free-Form Text Responses

No.	Response
1.	Hire real librarians and research staff trained in library services and data compilation.
2.	Increase the number of journals and books available.
3.	Please make sure that our libraries are fully funded. Funding cuts in recent years have reduced subscribed journal services, particularly in areas related to air pollution, mobile sources of air pollution, and aerosol science.
4.	Personally, I would just like to see an expansion of the available invertebrate taxonomy literature.
5.	Short and sweet videos [about] how to use the newest and the greatest resources of the EPA library.
6.	Occasional emails offering training on what resources/services are available from the EPA libraries.
7.	Trainings for grantees/interns even if their program doesn't require it. You never know when the resources could be helpful. This may also encourage other careers in the program to use library resources/services as well.
8.	Improve the website and offer training to divisions (e.g., during division meetings) to walk through library services with staff (particularly for new staff or for staff who rarely think to use the library).
9.	None; EPA libraries work very well for me at the moment.

No.	Response
10.	Easier access to what is available, topic-based info scans, collaboration space, and a language lab resource space are my top suggestions.
11.	Email [of] any new books that have arrived. This used to be done.
12.	If we were certain that the library was here to stay, I suspect we would rely on the librarians more in case development.
13.	Need broad access to technical publications, it is impossible to subscribe to too many technical publications; maybe EPA should have a link to the NY library who has access to these publications/magazines.
14.	Regular management-level trainings to update them about available services and resources so they can intelligently direct their staff to such.
15.	One suggestion might be to have videos about library services on the EPA intranet.
16.	Get back a law librarian that I can call for specific searches as needed. Could be remote, but need to have that person to help.
17.	More money for technical books.
18.	Maybe send a division-specific newsletter. For example, send an update about new technologies on groundwater treatment technologies or sediment remediation.
19.	At EPA, we receive a lot of information through email. When I receive a mass email from any part of the agency, I often skim the information for relevance. Since I do use the library to obtain publications that are otherwise inaccessible, it may be useful when the library emails the information to me that they include a couple of bulleted items that would let me know of other services available. This way I can learn more about the library services without having to seek out the information. I also would recommend that EPA libraries keep a file on individuals who use their service. Periodically, the library could reach out to individuals, like me, and suggest other services that could be helpful. As for me, I will be forwarding this email to my supervisor. I will ask her to promote the survey to her staff. Everyone taking the survey will be able to better understand library services at EPA. I hope you find these comments helpful.
20.	They're doing pretty good. Please just keep the libraries open and funded!
21.	Better search tool/engine.
22.	R[egion] 6 librarian is doing excellent job.
23.	As I have said, the librarian is the real asset. They are the source of possible references.
24.	Somehow get closer to the action.
25.	I would like to know more about the chat help.
26.	More hours, more staff.
27.	Continue with periodic 30-minute webinars on library services, accessing data, and doing better searches.
28.	Access to more legal databases.
29.	There should be better advertising agency-wide about the services the libraries offer.
30.	I wish they were quieter.

[APPENDIX IV]{.underline}. STATISTICAL CALCULATIONS

As noted earlier in this report, the survey's 63.2 percent non-response rate prompted FRD to consider applying several post-survey methods to address non-response bias. The division began by determining if there was an association between the survey respondents and library locations, which was the only identifying trait of which FRD had prior information. Statistical inferences about non-respondents are based on data from respondents because the two are assumed to be related in some way. The reason for assessing a possible association between respondents and a known characteristic (such as age, gender, or location) is to determine if their response depends on something observable. If such an association is not found in the data, then the conclusion is that their response depends upon something unknown or unobservable.

To assess the presence of such an association, the researchers conducted a chi-squared (χ^2) test of independence between the survey respondents and library locations, as well as a likelihood-ratio chi-squared statistic (G^2).

Broadly described, χ^2 and G^2 tests compare data about observed results with expected results to assess any associations between variables. For example, a random sample of 100 patrons of Library A and 110 patrons of Library B are asked a question with two responses, "yes" and "no." The observed results are that 47 patrons from Library A and 71 patrons from Library B answered "yes," with the rest responding "no." Once these data are put into a table, the expected results are calculated by multiplying the respective column and row totals and dividing that result by the total number of persons in the table. In this case, the expected number of Library A patrons reflects the number of Library A patrons who would be expected to answer yes given that there were 100 Library A patrons in the survey and 118 people in the survey who answered yes.

The observed and expected values for this example are:

Observed Responses				Expected Responses			
Response	**Library**		**Total**	**Response**	**Library**		**Total**
	A	**B**			**A**	**B**	
Yes	47	71	118	Yes	$\frac{100\times118}{210}=56.2$	$\frac{110\times118}{210}=61.8$	118
No	53	39	92	No	$\frac{100\times92}{210}=43.8$	$\frac{110\times92}{210}=48.2$	92
Total	**100**	**110**	**210**	**Total**	**100**	**110**	**210**

The χ^2 statistic itself is the sum of $\frac{(observed\ values - expected\ values)^2}{expected\ values}$, which in this example is:

$$\chi^2 = \frac{(47-56.2)^2}{56.2} + \frac{(53-43.8)^2}{43.8} + \frac{(71-61.8)^2}{61.8} + \frac{(39-48.2)^2}{48.2} = 6.55.$$

This result is then compared with the mean value of χ^2, which is calculated by multiplying the number of columns in the relevant table minus 1 by the number of rows minus 1; in this case: $(2-1)\times(2-1)=1$. The χ^2 of 6.55 is large enough compared to the mean of 1 that the probability of finding a result this much larger than the mean is approximately 1.05 percent.

In statistical terminology, this χ^2 result of 6.55 has a probability, or p-value, of 0.01048, making it statistically significant (a p-value of 0.05 is commonly used as the maximum threshold for statistical significance). It also means that the differences in patrons' survey responses are associated with the library they use.

Using these formulas, FRD calculated the initial observed and expected values of the EPA libraries' respondents and non-respondents, which are included in table 37.

Table 37. Initial Data Used for Chi-Squared Analysis

Library	Observed Values			Expected Values		
	Respondents	Non-Respondents	Total	Respondents	Non-Respondents	Total
Ada	3	2	5	1.8	3.2	5
Ann Arbor	13	31	44	16.2	27.8	44
Athens	3	2	5	1.8	3.2	5
Cincinnati	16	24	40	14.7	25.3	40
Corvallis	4	6	10	3.7	6.3	10
Duluth	6	4	10	3.7	6.3	10
Ft. Meade	0	4	4	1.5	2.5	4
Gulf Breeze	2	6	8	2.9	5.1	8
Headquarters	20	28	48	17.7	30.3	48
Las Vegas	2	2	4	1.5	2.5	4
Narragansett	8	4	12	4.4	7.6	12
NEIC	6	2	8	2.9	5.1	8
OGC	2	3	5	1.8	3.2	5
Region 1	9	20	29	10.7	18.3	29
Region 2	13	16	29	10.7	18.3	29
Region 3	22	36	58	21.3	36.7	58
Region 4	14	14	28	10.3	17.7	28
Region 5	19	39	58	21.3	36.7	58
Region 6	5	14	19	7.0	12.0	19
Region 7	4	16	20	7.4	12.6	20
Region 8	17	22	39	14.3	24.7	39
Region 9	23	31	54	19.9	34.1	54
Region 10	8	6	14	5.1	8.9	14
RTP	37	108	145	53.3	91.7	145
Total	**256**	**440**	**696**	**256**	**440**	**696**

Because χ^2 tests require that no more than 20 percent of the expected values in a table are less than 5, FRD combined the nine library locations with the fewest responses into a single group. The resulting observed and expected values are shown in table 38.

Table 38. Final Data Used for Chi-Squared Analysis

Library	Observed Values			Expected Values		
	Respondents	Non-Respondents	Total	Respondents	Non-Respondents	Total
Ann Arbor	13	31	44	16.2	27.8	44
Cincinnati	16	24	40	14.7	25.3	40
Headquarters	20	28	48	17.7	30.3	48
Narragansett	8	4	12	4.4	7.6	12
Region 1	9	20	29	10.7	18.3	29
Region 2	13	16	29	10.7	18.3	29
Region 3	22	36	58	21.3	36.7	58
Region 4	14	14	28	10.3	17.7	28
Region 5	19	39	58	21.3	36.7	58
Region 6	5	14	19	7.0	12.0	19
Region 7	4	16	20	7.4	12.6	20
Region 8	17	22	39	14.3	24.7	39
Region 9	23	31	54	19.9	34.1	54
Region 10	8	6	14	5.1	8.9	14
RTP	37	108	145	53.3	91.7	145
All other libraries	28	31	59	21.7	37.3	59
Total	**256**	**440**	**696**	**256**	**440**	**696**

The χ^2 result was 28.2 with a p-value of 0.020, providing statistically significant support for an association between the responses and library location. FRD also conducted a G^2 test (28.4 with a p-value of 0.019), which further supported an association between these variables.

An additional consequence of the χ^2 and G^2 tests is that they provide statistical support for the response data being "missing at random given covariates" (MAR), with the library locations and groups in table 38 being variables that change with response. The response data being MAR allows for the use of a statistical method called weighting-class adjustment to compensate for the non-responses.

This method produces a respondent weight by combining the weights from each stratum with the probabilities that individuals sampled from each stratum responded to the survey. The calculations for the respondent weights are somewhat extensive and difficult to concisely explain. Their substantive importance is in helping to compensate for non-response by estimating the number of responses for a sample frame or population. In this survey, for example, each Ann Arbor patron response was weighted by 17.692, meaning that each of these respondents statistically represented an estimated 17.692 Ann Arbor patrons (see table 39). The true opinions of all of the patrons from Ann Arbor and the other EPA libraries cannot be determined unless the entire population responds to a survey, which is why the numbers in this report are empirical estimations of their views.

Table 39. Weighting-Class Adjustment Calculations

Library	Stratum Population N_h	Stratum Sample n_h	Respondents n_{hR}	Weight $w_{hj} = \dfrac{N_h}{n_h}$	Sum of Weights for Respondents $w_{hj} \times n_{hR}$	Sum of Weights for Sample $w_{hj} \times n_h$	Respondent Probability $\hat{\phi}_c = \dfrac{w_{hj} n_{hR}}{w_{hj} n_h}$	Respondent Weight $w_{hj} \dfrac{1}{\hat{\phi}_c}$
Ann Arbor	230	44	13	5.227	67.955	230	0.295	17.692
Cincinnati	214	40	16	5.350	85.600	214	0.400	13.375
Headquarters	253	48	20	5.271	105.417	253	0.417	12.650
Narragansett	64	12	8	5.333	42.667	64	0.667	8.000
Region 1	152	29	9	5.241	47.172	152	0.310	16.889
Region 2	151	29	13	5.207	67.690	151	0.448	11.615
Region 3	304	58	22	5.241	115.310	304	0.379	13.818
Region 4	146	28	14	5.214	73.000	146	0.500	10.429
Region 5	309	58	19	5.328	101.224	309	0.328	16.263
Region 6	100	19	5	5.263	26.316	100	0.263	20.000
Region 7	103	20	4	5.150	20.600	103	0.200	25.750
Region 8	205	39	17	5.256	89.359	205	0.436	12.059
Region 9	285	54	23	5.278	121.389	285	0.426	12.391
Region 10	72	14	8	5.143	41.143	72	0.571	9.000
RTP	803	145	37	5.538	204.903	803	0.255	21.703
All other libraries	259	59	28	4.390	122.915	259	0.475	9.250

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