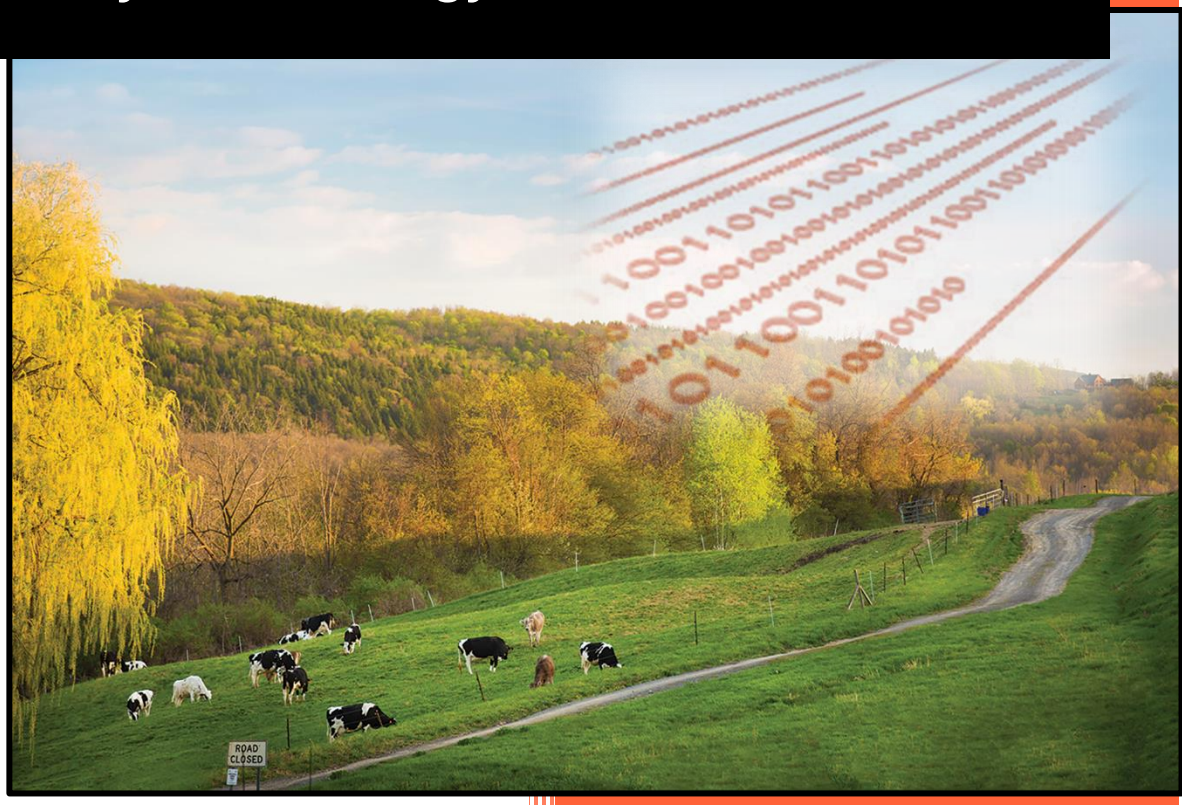
FELLOWSHIP SUMMARY REPORT

2020

The Digital Divide in NYS: Schoharie County Technology Needs Assessment



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Introduction

A “digital divide” persists across the United States (Anderson, 2018; Anderson & Kumar, 2019; Carlson, 2016; Griffith, 2019; Longley, 2019; Perrin, 2019; Talbot, 2017). This longstanding disparity between the “haves and have nots” regarding computer technology and Internet access has improved for some communities, but still endures between urban and suburban versus rural areas (Anderson, 2018; Anderson & Kumar, 2019; Carlson, 2016; Griffith, 2019). Residents of rural areas are most heavily impacted by this disparity and those with lower levels of family income or education are at an even greater disadvantage, (Anderson, 2018; Anderson & Kumar, 2019; Carlson, 2016; Longley, 2019) as are people over 65 years of age (Anderson, 2018; Longley, 2019). In rural America, residents are less likely to have access to and use high-speed broadband Internet connections, or use smartphones, tablets, laptops, and desktop computers compared to their urban and suburban counterparts (Anderson, 2018; Anderson & Kumar, 2019; Griffith, 2019; Longley, 2019; Perrin, 2019). Such disparities have implications for the ability of rural residents to take full advantage of online education, homework resources (the “homework gap”), career opportunities, job search and training tools, health information, and government services, as well as their overall digital literacy and inclusion in modern digital life (Anderson, 2018; Anderson & Kumar, 2019; Begany, 2014; Carlson, 2016; Microsoft, 2018; Talbot, 2017).

In New York State, even with the progress made through the Broadband for All initiative, wide agreement exists that upstate New York faces a lack of access to high-speed, broadband Internet and issues with digital inclusion (Karlin, 2019; McDonough, 2019a; Potter, 2018). Further, these issues may be more severe than previously understood (McDonough, 2019b; Microsoft, 2018). SUNY Cobleskill, in its role as a rural serving institution, is uniquely positioned to potentially address the digital divide and related issues in the greater Schoharie County community. As such, the work of this fellowship aimed to (1) gain a deeper understanding of the digital divide in New York State, with a focus on Schoharie County, and (2) obtain feedback from key Schoharie County stakeholders regarding their digital technology needs and interests and how SUNY Cobleskill might assist in addressing them.

Needs Assessment Administration

The central focus of this fellowship project was to conduct a needs assessment among various Schoharie County stakeholders regarding their perspectives on the area's digital divide, their perceived needs and interests regarding digital technology, and potential solutions. Each of the subsections below describes the process undertaken to conduct the needs assessment.

Stakeholder Analysis

As a first step, a stakeholder analysis was conducted to identify potential participants for the qualitative interviews. Identified stakeholders were individuals primarily from Schoharie County, including (1) public library administrators and regional library council leaders, (2) community, public, and non-profit organization leaders, (3) housing authority officials, (4) municipal and county government officials, (5) school district administrators and teachers, (6) college/university program leaders, (7) business owners, and (8) local residents. Individuals from state and national organizations, as well as agencies specializing in matters related to the digital divide and digital inclusion were also identified as key stakeholders.

Institutional Review Board (IRB) Review and Approvals

Next, an application to the SUNY Cobleskill Institutional Review Board (IRB) was prepared and submitted to obtain the requisite approval to conduct semi-structured qualitative interviews of stakeholder participants. As I currently serve as the IRB Chairperson, I recused myself from the IRB review process and ceded all decision-making about the IRB application for this fellowship research to the other IRB members. These IRB members reviewed and approved the application and, shortly thereafter, the interview process commenced.

Participant Recruitment and Data Collection

Purposive sampling was then used to identify and recruit specific participants for the semi-structured interviews, complemented by subsequent snowball sampling. Potential participants were invited via email and provided with informed consent materials which they agreed to, including the condition of anonymity/confidentiality.

Semi-structured qualitative interviews – that employed a flexible blend of closed- and open-ended questions, including follow-up questions – were conducted. A total of 33 interviews, each approximately one-hour in length, were completed with 35 participants (some interview sessions included two participants). All interviews were conducted remotely, via phone or with computer audio conferencing. Participants included individuals from the following categories:

1. Libraries – public library officials and board members
2. Schools – teachers, superintendents, principals, librarians, technology directors, and teaching directors
3. Residents – local residents
4. Organizations – community-nonprofit organization executive directors, advisors, administrators, and board members
5. Government – town supervisors
6. College/University – college program leaders
7. Business – business owners

COVID-19 Project Impact

Originally, the qualitative interview portion of the fellowship was scheduled to take place between approximately March 15th through June 15th, 2020. However, due to the outbreak of the coronavirus, subsequent departures from campus, and speedy pivot to remote work and online course delivery, the qualitative interview process was delayed until early April 2020. Once interviewing commenced, however, they continued through early September 2020.

Digital Divide-Related Perspectives and Needs in Schoharie County

Digital Divide Perspectives

Several key, prevailing insights emerged from the qualitative research regarding interviewees' perspectives on the digital divide in Schoharie County. Specifically:

- Interviewees overwhelmingly agreed that the digital divide is a problem in Schoharie County and other rural areas of New York State. However, they noted that the lack of broadband Internet occurs in "pockets" around the county where some areas have no broadband Internet service at all ("unserved" areas) or they have poor Internet upload/download speeds ("underserved" areas). Further, the digital divide is linked to socio-economic status and poverty and disproportionately impacts those of lower socio-economic status. Interviewees also agreed that the digital divide is not just a matter of broadband Internet access; but, it also includes issues related to access to computing devices and technical support, the affordability of Internet services and computing devices, and the ability to understand and effectively use digital technology (digital literacy). All interviewees noted that the COVID-19 virus had laid bare and exacerbated the county's issues with the digital divide.

- The digital divide is a complex, multi-faceted phenomenon that encompasses issues of digital access, affordability, and literacy. Regarding access, New York State has made substantial progress over the past decade in addressing issues

of broadband Internet connectivity for its citizens, particularly through its Broadband Program. Many Broadband Program projects have been completed, but, some are still underway. Currently, it's estimated that approximately 97-98% of New York State has some form of broadband Internet and fares quite well compared to other states.

- Getting a fully complete, accurate picture of the extent of the digital divide is challenging in Schoharie County (as it is in similar rural areas of New York State). One of the main obstacles to obtaining accurate data and information about the extent of the digital divide is the issue with broadband mapping. Central to this issue is the fact that much of the broadband data are collected based on census blocks. So, if even one household in a given census block has broadband Internet, then the whole census block is counted as having broadband Internet. Further, New York State regards satellite Internet service as "broadband," even though satellite is not of consistent quality or truly high-speed broadband. So, underserved areas, where satellite Internet service is the only option, are inaccurately categorized as areas with broadband Internet. According to several interviewees, one of the best (although not perfect) tools available for determining the extent of the digital divide in Schoharie County is the "Broadband Access Map." This map uses data from the Federal Communications Commission to visualize the percentage of the population *without* broadband Internet access, based on school district (see Appendix Item 1A, 1B, and 1C). According to this data, Schoharie County fares relatively well compared to some nearby counties, such as Otsego County, Herkimer County, Montgomery County, Greene County, and Hamilton County to the north. Each of these counties has "extremely poor" or "poor" broadband Internet access, while Schoharie County has "good" or "partial" broadband access (see Appendix Item 1D).

Digital Needs

Interviewees expressed a strong interest in and openness to fostering deeper ties with SUNY Cobleskill and collaborating where sensible on initiatives related to the digital divide, even as various participants perceived the college to be closed off and unwelcoming to the community. They think that the college could be a vital partner to the community, particularly in providing digital skills training and helping community members make more efficient use of digital technologies.

Generally speaking, there were two broad categories of digital needs related to the digital divide expressed by the interviewees, namely educational support and technology support:

- ❖ Educational support – the need for digital literacy and skills development focused on both personal/home computing and workplace computing; support could include courses, mini-courses, workshops, trainings, lecture series, technology events, and other educational offerings

- ❖ Technology support – the need for technology services such as access to broadband Internet, WiFi, and computing devices as well as general technical support services

Most interviewees also agree that more state and/or federal funding would be crucial to close the remaining infrastructure gap in broadband Internet access as well as related digital inclusion issues. Such funding has been essential for past and current projects which have allowed Internet service providers to expand their broadband infrastructure and bring high-speed Internet to their service communities. There is much work yet to be done to fully close the digital divide. In the meantime, various "stop-gap" measures can continue to be implemented as resource availability permits.

The Role of SUNY Cobleskill – Potential Solutions and Programming Options

Note: potential solutions and programming options based on an in-person, on campus approach would naturally be prohibited or severely limited while COVID-19 restrictions are in place.

<u>On Campus</u>

- "Digital Commons" – creation of a centralized, on campus facility for year round digital training, services, support, and career preparation geared for community member use. The Digital Commons could be established in a repurposed existing space on campus (or, in an off-campus location within the community, similar to how Coby's was situated downtown, or perhaps in partnership with a local library). Services and offerings provided to the community in this space could include:
    - Access to computing devices (desktops, laptops) and high-speed Internet
    - General technical support and training from on-hand technology experts (e.g. students, faculty, and staff who serve as "community tech advocates/coaches")
    - Workforce digital skills training (e.g. database, web, networking, and computer programming technologies; information management, communication, and collaboration)

    - Personal digital skills training (e.g. online banking, smart home technology, Zoom/video conferencing, popular software applications, online privacy and security)
    - Digital skills training and support specially targeted to meet the unique needs of different groups (e.g. K-12 teachers/staff, K-12 parents, K-12 students, local businesses, farmers, seniors)

  Affordability is a major barrier to broadband Internet and computing device access. As such, given the link between the digital divide and poverty, Digital Commons offerings should include some low-cost or free options where possible. Participation by faculty and student technology experts could be regarded as a service or service-learning opportunity.

- "WiFi Program" – establishment of a program that provides community members free Guest access to the college WiFi in specially-designated areas on campus, such as in a campus coffee shop-eatery and/or campus parking lot drive-in. The campus parking lot option is similar to WiFi services provided in municipal building and library parking lots; but, the college could design more welcoming spaces with special signage that encourages community interaction with the campus.

- "Mobileskill Digital" – enhancement of the college's Mobileskill initiative to include Internet access and digital skills training on-the-go. Similar to programs in other rural communities, where school buses are outfitted with WiFi and parked in a central location in unserved/underserved areas, the college could enable the Mobileskill van as a WiFi hotspot. The Mobileskill van could then be deployed it to various unserved/underserved areas in the county to provide a day of Internet access, along with special digital literacy and skills training workshops, while also advertising the college as a whole.

- "Hotspot Lending Program" – a program, modeled after existing such programs, where state or federal grant funding is obtained to provide wireless hotspots to community members in unserved/underserved areas with poor or no Internet access. Sufficient cell tower placement and service is required for this option to succeed.

Virtual

- "Virtual Digital Commons" – a wholly online version of the on campus Digital Commons that includes all of the digital education and training offerings, but

without access to computing devices or the Internet. This web-based service could be newly created as a customized, stand-alone application or developed through existing campus resources (e.g., Moodle) that are made available to participating community members. A limitation of this web-based approach is that community members in unserved/underserved areas would likely be less able to participate.

Hybrid

- "Digital Commons 365" – The hybrid approach is one that provides for community use of features from both the on campus and virtual instances of the Digital Commons. The approach would accommodate community members who prefer remote access to digital skills training and technical support services as well as those that prefer in-person interaction. Community members could also move back and forth between the on campus and virtual Digital Commons as needed.

A careful advertising and marketing effort would be needed to attract community members in close geographic proximity to an on campus Digital Commons as well as people traveling into Cobleskill from the outskirts for errands, shopping, dining, and entertainment who might be interested in visiting the college. Advertising and marketing campaigns targeted to potential users of a virtual and/or hybrid Digital Commons would also need development.

Student Engagement in the Fellowship Work

As noted in the interim progress report on this fellowship, two students participated in the project on a volunteer basis. Specifically, during Fall 2019, Christian Larson spent time learning how to use the reference management software package called "Zotero." Zotero is a popular, free and open-source tool for cataloging, organizing, and notating bibliographic data and research materials. At the end of the semester, he drafted and delivered a brief report on the software's features, functionality, and recommendations for best use. During Spring 2020, Christian continued his volunteer work with Zotero and began cataloging various literature sources gathered during the course of the fellowship project. A screenshot of the Zotero interface with catalogued literature is shown below in this report's Appendix section, Item 2. Another student, Will Rigby, joined the project during Fall 2019 and volunteered his time to research available datasets related to the digital divide, especially re: Schoharie County. This work

provided impetus for the creation of a data resources table. Will was unable to continue his volunteer service during Spring 2020.

Additional Fellowship Activities

In addition to the above-mentioned aspects of the fellowship work, additional activities were accomplished as follows:

- ➔ A search, collection, and review of literature on the topic of the digital divide from journalistic sources, grey literature, and academic journal sources was conducted in an ongoing manner throughout the life of the fellowship
- ➔ A search, collection, and review of secondary data resources and map visualizations related to the digital divide from government and nonprofit organization sources was conducted in an ongoing manner throughout the life of the fellowship
- ➔ A cataloging of potential external grant-funding opportunities for initiatives, projects, and research focused on the digital divide and digital inclusion

Conclusion and Next Steps

A wide opportunity exists for SUNY Cobleskill to pursue various solutions and programming options and make a marked difference in supporting the Schoharie County community (and beyond) in addressing aspects of the digital divide. Such activities could also broaden options for faculty, staff, and students to participate in digital divide-related community service, program implementation, applied experiential projects, and research. An important next step is to continue tracking and ultimately pursue funding sources to support program development, especially in the wake of COVID-19, which has spurred renewed and intense interest in the digital divide at the state and federal levels. This renewed interest has resulted in the introduction of several pieces of state- and federal-level legislation that, if passed, could result in new potential funding sources for digital literacy, equity, and inclusion initiatives.

Acknowledgements

Many thanks to those who supported this fellowship work, including (1) the SUNY Cobleskill Institute for Rural Vitality's Center for Community Advancement, (2) Christian Larson and Will Rigby for their sacrifice of time and the many lively and insightful conversations about the digital divide and other aspects of this work, and (3) the numerous qualitative interview participants for their generosity of time, spirit, and supplemental informational resources.

References

Anderson, M. (2019, September 10). About a quarter of rural Americans say access to high-speed internet is a major problem. *Pew Research Center: Fact Tank*. Retrieved from https://www.pewresearch.org/fact-tank/2018/09/10/about-a-quarter-of-rural-americans-say-access-to-high-speed-internet-is-a-major-problem/.

Anderson, M., & Kumar, M. (2019, May 7). Digital divide persists even as lower-income Americans make gains in tech adoption. *Pew Research Center: Fact Tank*. Retrieved from https://www.pewresearch.org/fact-tank/2019/05/07/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption/.

Begany, G.M. (2014). Addressing eHealth literacy and the digital divide: Access, affordability and awareness. *Bulletin of the Association for Information Science and Technology, 41*(1), 29-32.

Carlson, E., & Goss, J. (2016, August 10). The state of the urban/rural digital divide. *National Telecommunications and Information Administration: United States Department of Commerce*. Retrieved from https://www.ntia.doc.gov/blog/2016/state-urbanrural-digital-divide.

Griffith, E. (2019, June 6). Rural vs. suburban: The digital divide lives on. *PC Magazine*. Retrieved from https://www.pcmag.com/news/368791/rural-vs-suburban-the-digital-divide-lives-on.

Karlin, R. (2019, June 9). Lack of internet, computers challenges poor, rural students. *Times Union*. Retrieved from https://www.timesunion.com/news/article/Lack-of-internet-computers-poses-challenges-for-13959705.php.

Longley, R. (2019, May 14). Understanding America's digital divide: Internet access Is still a problem in rural America. *ThoughtCo.* Retrieved from https://www.thoughtco.com/the-digital-divide-introduction-4151809.

McDonough, A. (2019a). Upstate’s never-ending fight for broadband. *City & State New York*. Retrieved from https://www.cityandstateny.com/articles/policy/technology/upstate-fight-for-high-speed-internet.html.

McDonough, A. (2019b). What we know about rural broadband access. *City & State New York.* Retrieved from https://www.cityandstateny.com/articles/policy/technology/what-we-know-about-rural-broadband-access.html.

Microsoft Corporation. (2018). An update on connecting rural America: The 2018 Microsoft Airband initiative. *Microsoft Corporation.* Retrieved from https://blogs.microsoft.com/uploads/prod/sites/5/2018/12/MSFT-Airband_InteractivePDF_Final_12.3.18.pdf.

Perrin, A. (2019, May 31). Digital gap between rural and nonrural America persists. *Pew Research Center: Fact Tank*. Retrieved from https://www.pewresearch.org/fact-tank/2019/05/31/digital-gap-between-rural-and-nonrural-america-persists/.

Potter, C. (2018, February 26). Rural New York communities prepare for high-speed internet. *Government Technology*. Retrieved from https://www.govtech.com/network/Rural-New-York-Communities-Prepare-for-High-Speed-Internet.html.

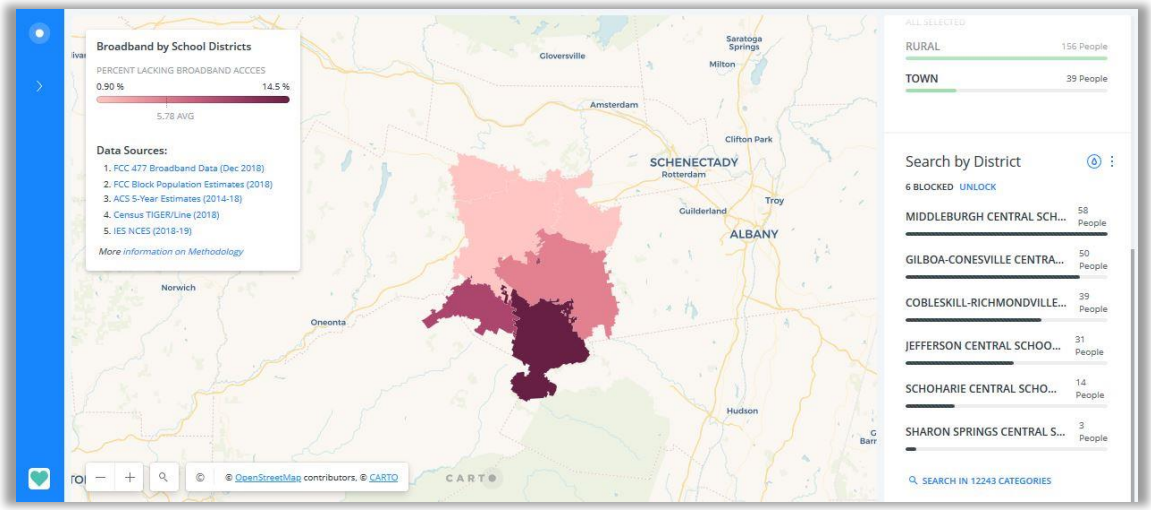
Talbot, D. (2017, January/February). The hole in the digital economy. *MIT Technology Review, 120*(1), 88-93.

APPENDIX

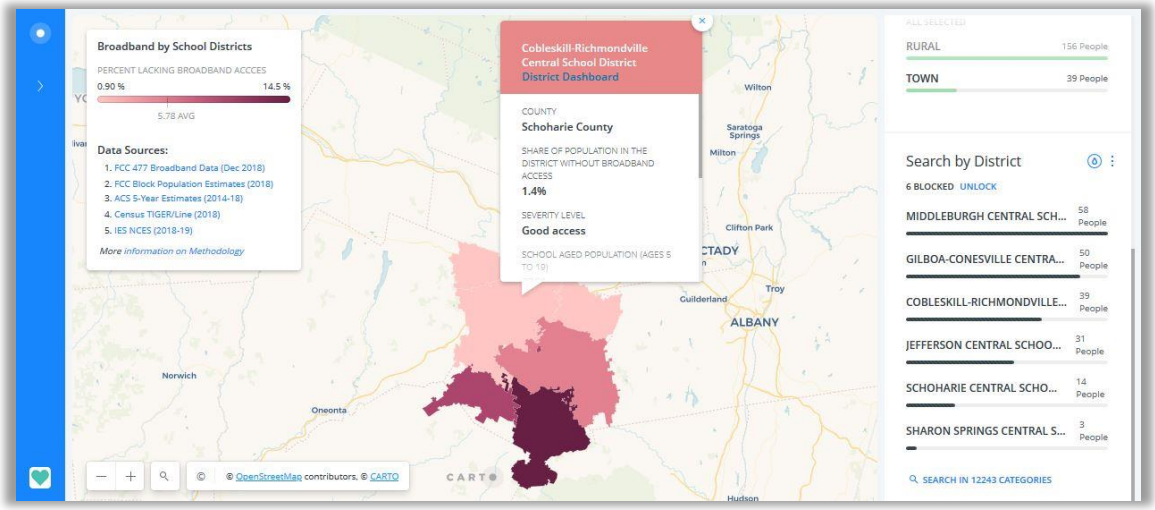
Item 1: Broadband Access Maps (by School Districts)

*Note – it is recommended to increase the Zoom level to **200%** for better viewing of the map screenshots; these maps and data can be found at:*
https://maps.ruralopportunitymap.us/broadband-access-map

1A: This map illustrates the percentage of the population lacking broadband access in each of the school districts in Schoharie County (percentage of population lacking ranges from 0.90% - 14.5%, with an average of 5.78% lacking broadband access)

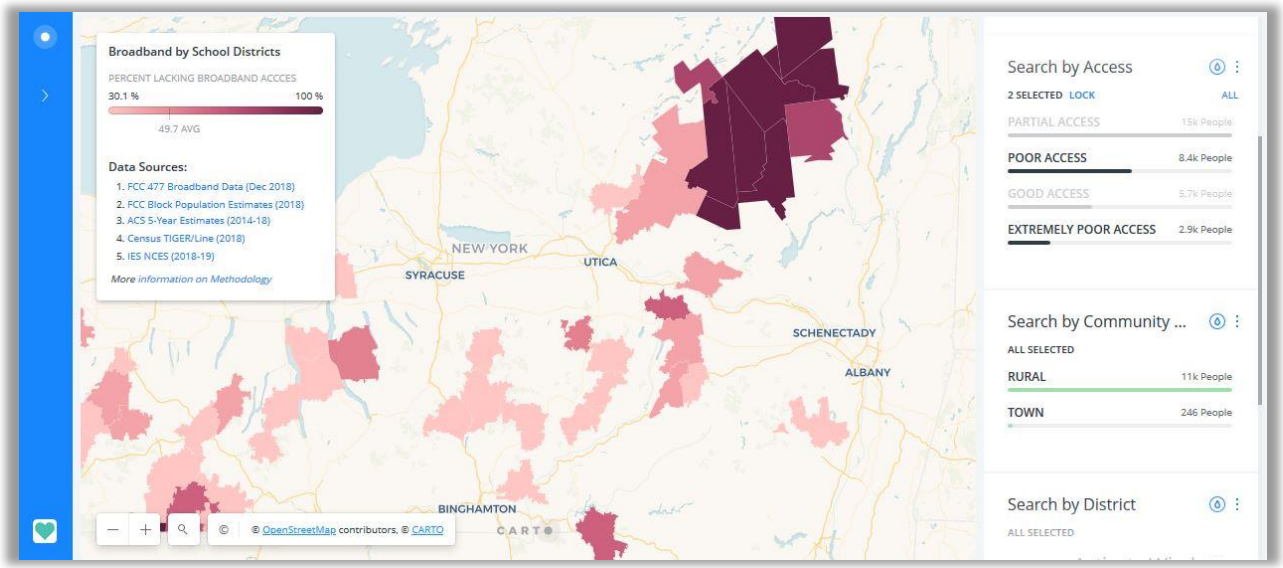


1B: This map illustrates the percentage of the population lacking broadband access in each of the school districts in Schoharie County (with the Cobleskill-Richmondville Central School District pop-up data shown)



1C: This map illustrates the percentage of the population lacking broadband access in all of the access categories – “partial,” “poor,” “good,” and “extremely poor” access *(note that the Schoharie County area is largely categorized as having “good” or “partial” access)*

1D: This map illustrates the percentage of the population lacking broadband access in “poor” and “extremely poor” access areas *(note that the Schoharie County area does not fall into these categories and is therefore not shaded; rather, areas to the north and west of Schoharie County have larger percentages of the population who lack broadband Internet access)*



Item 2: Zotero Reference Management Software – Digital Divide Literature