Laura Bush 21st Century Librarian Program Grant Preliminary Proposal:
Gigabit Libraries and Beyond

The University Corporation for Advanced Internet Development (UCAID), doing business as Internet2, requests $249,788 for a project entitled "Gigabit Libraries and Beyond," which will build on the IMLS-funded Toward Gigabit Libraries Toolkit and Broadband Action Plan (RE-00-15-0110-15) to empower library practitioners to become more informed consumers, advocates, and providers of internet access and digital services to their communities. The project will include Carson Block Consulting as a partner.

Statement of Broad Need

If libraries in rural and tribal areas do not have technical skills to continually increase and manage connectivity speeds, they risk leaving behind millions of people who rely on public access technologies and connectivity. Many libraries without access to skilled technical staff do not make the best use of their connections through best practices that would maximize the connectivity and best serve their communities.

Public libraries are evolving their mission to become a central community link and resource for digital literacy, broadband access, and services providing their patrons access to digital content, applications, and resources. According to the 2018 Federal Communications Commission Broadband Progress report, 14 million rural Americans and 1.2 million Americans living on tribal lands lack broadband at speeds of 10 Mbps/3 Mbps, which is the existing speed benchmark for fixed broadband.[1] The Pew Research Center found that 77% of Americans who use the internet but lack home access say computer and Internet access at their public library is important to them and their family.[2]

In order for libraries to bring these digital resources to their patrons, they need robust and scalable broadband infrastructure to serve their facilities. However, many of the nation's libraries lack the technical knowledge to effectively advocate for and deliver the highest quality broadband possible to their patrons and staff in order to support their evolving digital mission. These challenges are particularly acute in rural and tribal libraries, given their geographic remoteness and limited access to technically skilled staffing resources. According to the 2016 Public Libraries in the United States Survey of the over 9,000 public library administrative entities in the United States, 44% of the total are located in geographic areas classified as rural.[3] On average, only 28% of public libraries with a rural locale classification have a librarian with an ALA-MLS degree (as compared to 86% of city libraries).[4]

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[1] 2018 Broadband Deployment Report, *Federal Communications Commission*, p.22 (Table 1) .https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2018-broadband-deployment-report.

[2] "Public libraries and technology: From 'houses of knowledge' to 'houses of access'," *Pew Research Center*, July 9, 2014.

[3] The Institute of Museum and Library Services. 2019. *Public Libraries in the United States Fiscal Year 2016*. Washington, DC: The Institute, 3-4.

[4] *Id*. at 37.

When a small library has only a single full-time librarian, they also often serve as the de facto IT specialist for the library.[5] For example, many libraries without access to skilled technical staff subscribe to a broadband service through an ISP, but do not have the necessary technical knowledge or skills to make the best use of their connections through network best practices that would maximize the efficiency of their connectivity and serve their communities at the highest possible levels. Rural and tribal libraries also face challenges when it comes to hardware in their public libraries. While 66.4% of urban libraries have a technology replacement schedule, 69.5% of rural libraries can only replace their public access computers as needed.[6] In a national survey of tribal libraries, 44% of respondents reported that they had no library technology plan to guide equipment and software purchases, security, and other information technology issues.[7] Roughly 30% of public libraries in the 2013 Digital Inclusion Survey did not know their subscribed or actual point-in-time broadband speeds.[8]

If libraries in rural and tribal areas do not have the technical skills to continually increase their connectivity speeds, modify their networks, and actively manage their connectivity, they risk leaving behind the millions of people in rural and tribal communities who rely on public access technologies and internet connectivity provided by the library.

The Toward Gigabit Libraries Toolkit

This project will build on the past success of the Toward Gigabit Libraries (TGL) project. As the stage of this project is **scaling**, it is important to review the history and accomplishments of the TGL project to show that the foundational work is worthy of further investment and a broader impact.

The previous TGL project provided hands-on broadband infrastructure training to rural and tribal librarians, especially for those serving small, rural, or tribal libraries with limited technology support to enhance the provision of community digital and broadband-enabled services. The team developed technical broadband assessment tools (a "toolkit") and related training that addresses library-specific broadband technology and infrastructure needs delivered via an informal, hands-on training and assessment checklist.[9] The toolkit was designed to be accessible to all levels of library workers, including non-technical staff.

The Initial Success of the TGL Toolkit

By all measures, the TGL project was a success – meeting or exceeding its goals. The project reached at least 80 practitioners in 58 rural, public, and tribal libraries across 12 states.[10] The

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[5] Bertot, J. C. (2009). Public Access Technologies in Public Libraries: Effects and Implications. *Information Technology and Libraries*, *28*(2), 81-91, 88 https://doi.org/10.6017/ital.v28i2.3176.

[6] John Carlo Bertot et al., *2011-2012 Public Library Funding and Technology Access Survey: Survey Findings and Results* (College Park, MD: Information Policy and Access Center, 2012), 46.

[7] Miriam Jorgenses, Traci Morris, and Susan Feller. 2014. Digital Inclusion in Native Communities: The Role of Tribal Libraries. Oklahoma City, OK: Association of Tribal Archives, Libraries, and Museums, 24.

[8] Clark, Larra, Broadband Quality in Public Libraries: Speed Test Highlights (April 2015).

[9] Library staff can download the toolkit at www.internet2.edu/tgl. A brief video about the toolkit has been viewed more than 900 times as of winter 2020: https://www.youtube.com/watch?v=PXWv3-HYm-I.

[10] Internet2 "Toward Gigabit Libraries" Final Report – IMLS Award # RE-00-15-0110-15, www.internet2.edu/tgl, 6.

project leveraged the expertise of at least 25 advisors to develop the toolkit, and worked with at least 30 advisors in 12 states to pilot the toolkit.[11] In the process of administering the toolkit, the team noted common issues among many participating libraries, including insufficient bandwidth, data wiring, and network setups, as well as old and/or obsolete equipment, poor WiFi coverage, and low participation in E-rate.[12]

Of 58 libraries visited, 39 participated in a post-visit survey, with the vast majority indicating that understanding of technology increased as a result of their participation. They reported leveraging their toolkit experience and new knowledge with broadband providers and IT support entities.[13] Of those surveyed, nearly 90% cited improved knowledge of their broadband connection, 77% cited improved knowledge of their WiFi network, and 61% reported increased knowledge of broadband funding opportunities.[14] Project participants unanimously gave the project high rankings and reported overwhelmingly positive experiences, both in-person and through a satisfaction survey. 100% of respondents indicated they would recommend the process to other libraries.[15] Pilot participants also shared their assessment of the process, toolkit, and broadband improvement:

> "I found the process to be very educational and helpful. I feel I learned a huge amount about our broadband (and local network) in going through the process, and I expect to learn even more as I read through the materials you left with me. I also really appreciate having the physical printouts and sheets to refer back to and use as a reference."
>
> "Going through the toolkit helped me understand my library's broadband infrastructure better and feel more confident talking about it with others."
>
> "I thought [the process] was very effective. I most appreciated the visual diagram which pictured how internet service works, and the different steps it goes through before it gets to a computer."

At the close-out workshop in June 2018, project participants also reported the following:

- Participating library staff gained confidence and mastery in technology topics;
- The toolkit process promoted better communication and collaboration between library staff and those assisting them with technology;
- The process promoted stronger grass-roots advocacy for improved technology among participating libraries;
- State library and research and education (R&E) staff gained a better understanding of the challenges faced in the field by rural and tribal libraries;
- The toolkit process promoted cross-agency collaboration (often between the State Library and the R&E network in the state); and

[11] *Id*.
[12] *Id*. at 7.
[13] *Id*.
[14] *Id*. at 8.
[15] *Id*.

- The toolkit formed a basis for one state's efforts to publish "best practices" for rural and small libraries.[16]

The Continued Success of the TGL Toolkit
At present, TGL continues to have a dramatic impact on U.S. rural and tribal libraries and remains in active nationwide use. State library organizations and R&E networks have used the open-source toolkit for regional and local training outreach and training.

In Montana, 115 of the state's 117 libraries have used the toolkit. "The gigabit toolkit is more accessible in terms of the amount of time and investment it takes for a library to complete (it), especially for small or rural libraries that just don't have either the time or the technical know-how," Montana State Librarian Jennie Stapp said. Thanks to the toolkit, Montana libraries are setting themselves up for success. The State Library currently is analyzing the data collected, with a plan to have a final report by the end of March. Ultimately, the State Library hopes to use the data to develop a program to help libraries consistently refresh hardware and negotiate reduced rates with commercial providers.

Pennsylvania's R&E network, KINBER, also implemented the toolkit in all of the state's libraries. In January of 2019, KINBER was awarded the Library Services and Technology Act statewide library assistance grant for the TGL in Pennsylvania. KINBER conducted a survey of Pennsylvania's libraries on their broadband capabilities and awareness and provided training and education through in-person workshops, virtual events, and library site visits by KINBER on the use of the Library Broadband Toolkit and Broadband Improvement Plan template.

The project also brought together the Nebraska Library Commission and the Nebraska Office of the Chief Information Officer, resulting in a Sparks Grant from IMLS, a National Leadership Grant in the amount of $25,000. The grant, entitled "Nebraska Schools and Libraries – Breaking the Ice and Igniting Internet Relationships," involves five Nebraska communities: Bancroft, Bayard, Genoa, Imperial, Verdigre, and Wymore. Using fixed wireless technology, the public library will offer the school district's students and staff the ability to access the school district's network within the public library.

Building on the success of the TGL grant, Internet2 partnered with Simmons University and the New American Foundation as a participant an IMLS FY2018 National Leadership Grants for Libraries award. The 24-month research project, "Measuring Library Broadband Networks for the National Digital Platform," LG-71-18-0110-18, is currently in the process of examining how advanced broadband measurement capabilities can support the infrastructure and services needed to respond to the digital demands of public library users across the U.S.[17]

Opportunities to Improve and Expand Upon the TGL Toolkit's Success
As of winter 2020, TGL project members continue to respond to requests to present the toolkit and toolkit content to local, regional, and national audiences. While project participants enthusiastically confirmed the positive results of the toolkit, the experience led to the discovery

[16] Internet2 "Toward Gigabit Libraries" Final Report, 10.

[17] For more information about the Measuring Library Broadband Networks project, visit https://slis.simmons.edu/blogs/mlbn/about/.

of deeper, unmet needs. These needs include the facilitation of stronger ties between state library organizations, tribal organizations, and R&E networks to deploy the toolkit; to reach out more deeply with tribal libraries; and to further simplify the toolkit process for participants.

The reaction to the toolkit from the library community began strong with the first public presentation of the toolkit and initial pilot results to the October 2017 meeting of the Chief Officers of State Library Agencies (COSLA). Demand for the toolkit from state leaders dwarfed the resources that the first grant could provide, although the team worked with all interested states to offer some level of access and support to the toolkit.

In this scaling up of the TGL project, there is another potentially underrepresented type of library to explore: the technologically challenged urban library struggling with needs and gaps that are similar to those experienced by rural and tribal libraries. Although the project team has been able to find little research on this topic, it is possible that the need is emerging and perhaps "under the radar." As there are "food deserts" in urban areas, the project team was challenged with the notion that there might be "tech deserts" in urban library environments. In the experience of one project team member, library consultant Carson Block, most urban libraries have a capable IT department that addresses needs throughout the library's service area. However, Block has worked with some urban libraries (especially those fully dependent on a City or County for all IT Support) where gaps exist – where the host government agency is either under-resourced or has deprioritized the library. In each of these cases, the toolkit would help equip the library with knowledge and language to better advocate for itself. That is a key benefit of the toolkit for rural and tribal libraries, and may hold potential for those urban libraries experiencing these challenges, as well. For the remainder of this proposal narrative, this potential urban library subset with such challenged will be referenced simply as "select urban libraries."

Project Design

The purpose of the "Gigabit Libraries and Beyond" project is to further leverage IMLS investment in the agency-level objective of **building the capacity of libraries** to scale the successful TGL program to more urban, rural, and tribal libraries throughout the U.S. and improve the well-being of their communities. It will do so by training and developing the library workforce to better understand broadband and technology in their libraries. Adopting the toolkit and accompanying Broadband Improvement Plan will build the capacity of libraries to improve their communities by sharing and adopting best practices and innovations. This project will build the capacity of libraries to improve their communities by identifying trends to help libraries make informed decisions on broadband improvement, technology purchases, and IT planning.

As a **scaling proposal,** the work has been piloted within the identified domain and yielded positive results with its initial target users. The key concept of this proposal is further saturation. This will empower and equip state library staff, move more significantly into tribal areas, train the trainer, and create stronger connections between subject matter experts to improve technology to library patrons throughout the U.S. and tribal lands.

The project's activities include the following:

- **Perform minor updates to the TGL toolkit.** The library community in the U.S. has been using the open-source toolkit since 2018, often "remixing" toolkit content into

training materials at local, regional, and state levels. The project will learn from these uses to identify areas of improvement or refinement to the core toolkit.

- **Expand toolkit use and effectiveness in rural and tribal libraries.** The project will increase outreach and education opportunities for rural and tribal libraries, including training materials and train-the-trainer activities.
- **Formally connect State Library organizations, R&E networks, and other partners for toolkit deployment.** The project will continue TGL's practice of convening meetings of State Library Organizations and technology experts from R&E networks, universities, and tribal entities while building pathways, methods, and opportunities to sustain and expand these demographically and geographically.
- **Enhance tribal library outreach.** Of the 58 libraries visited in the TGL project, 11 were tribal. This project will build upon and expand the use of the toolkit in tribal libraries.
- **Automate/simplify the toolkit.** Although TGL toolkit trainees reported that it was easy to use, this project will increase accessibility to promote easier understanding.
- **Expand the toolkit to select urban libraries.** While the toolkit was initially developed for rural and tribal libraries, urban libraries that do not have access to sufficient technical help can also benefit from using the toolkit. We plan to partner with thought leaders who represent urban libraries to explore the issue, identify urban libraries, and disseminate the toolkit.
- **Expand partnership opportunities**. The project will engage in outreach with potential partners, including state library organizations, R&E networks, universities, the Association for Rural and Small Libraries, the Association of Tribal Archives, Libraries, and Museums (ATALM), and tribes and tribal universities.

Further, this project intends to leverage the deep, technical expertise of the R&E community to help develop this library broadband assessment toolkit and pilot its use with library practitioners in at least 30 rural public and tribal libraries across the country. The Internet2 community, which includes more than 250 higher education institutions and regional R&E network partners, has worked as a trusted partner with community anchor institutions (CAIs) to provide advanced networking connectivity and technical expertise for nearly two decades. Today R&E networks connect over 100,000 CAIs across 44 states, including one quarter of our nation's public libraries. The Internet2 R&E community is uniquely positioned to work together with rural and tribal libraries to assess their current broadband infrastructure, identify common networking problems, and suggest ways to solve them.

Work Plan

Months 1-6

- Perform an inventory of known implementations of the TGL Toolkit throughout the U.S. and conduct interviews to learn successes and further needs. Identify and revise the toolkit with any minor updates that would make the core toolkit stronger and more effective.
- Convene a two-day leadership conference with our subject matter experts: participants from rural, tribal, and select urban libraries and the R&E network community. The purpose of this gathering is to strategize methods to grow the use and effectiveness of the toolkit in rural, tribal, and select urban libraries; connect State Library Organizations and

other technology partners (including R&E networks, university, tribal and others); explore methods to perform deeper tribal engagement; and explore methods to identify and reach select urban libraries with approaches to simplify/automate the toolkit. This group of subject matter experts will continue to be engaged throughout the grant period to advise the project team, provide feedback through virtual means or opportunities to gather in-person at conferences. In some cases (specifically tribal libraries and select urban libraries) create ad-hoc advisory groups.

- Identify and schedule strategic conference presentations while the project is in process that meet the outreach goals of the project. These conferences include: the Public Library Association conference, Urban Librarians Conference, American Library Association Annual Conference and Midwinter Meeting, Association for Rural & Small Libraries conference, American Library Association Library Information Technology Association conference, and ATALM conference.
- Create and maintain a website and social media presence throughout the grant period to share information and proactively engage with project participants.

Months 1-24

Grow use/effectiveness of the toolkit

- Phase 1: (months 1-6) Create training curriculum
- Phase 2: (months 6-24) Convene strategic "train the trainer" opportunities at conferences throughout the grant period, focusing on the target audiences of rural, tribal, and urban libraries with gaps in resources, staffing, or technology.

Months 6-24

Formally connect state library organizations, R&E networks, and other similar stakeholders

- Phase 1: (months 1-6)
    - Inventory all possible partners by state and create a comprehensive list
    - Send an introductory letter and/or survey to introduce the toolkit and gauge interest in helping.
    - Create (from existing TGL materials) process guidelines/manual for partners
- Phase 2: (months 6-12) Leveraging relationships with subject matter experts, put together phone calls/web calls to introduce potential partners, describe the process, and encourage visits.
- Phase 3: (months 12-24): Provide advice and consultation to burgeoning partners to promote success

Months 6-24

Deeper outreach to tribal libraries:

- Phase 1: Create an advisory sub-group to identify more tribal stakeholders (including tribal libraries; tribal "train the trainers" candidates and others, and methods of introduction/contact for each
- Phase 2a: Perform "train the trainer" sessions with tribal stakeholders
- Phase 2b: Perform select tribal site visits as advised by the advisory sub-group

Months 6-24

Simplify/Automate the toolkit:

- Phase 1: (months 6-8) Articulate objectives for simplification/automation of toolkit and create a scope of work with project requirements and desired outcomes
- Phase 2: (months 8-12) Develop simplified/automated version of the toolkit
- Phase 3: (months 12 - 24) Test, refine, and finalize

Throughout the Project Timeline
The project team will apply to conferences to present programs and workshops on the toolkit, and convene formal and informal gatherings to engage target communities and audiences, including ATALM, rural libraries, public libraries, R&E networks and others.

Project Closeout
In the final months of the project, reconvene the original subject matter experts (and new ones who have emerged throughout the project) to evaluate the project and process (by identifying successes and lessons learned) and brainstorming any new opportunities for the toolkit and future users.

Project Goals and Measures:
The key concept of this proposal is further saturation of the toolkit to:

- empower and equip state library staff
- move more significantly into tribal areas
- train the trainer
- create stronger connections between subject matter experts to improve technology to library patrons throughout the U.S. and tribal lands.
- Build upon the metrics from the original TGL grant (i.e., user evaluation of the toolkit and the number of Broadband Improvement Plans created)

To measure our primary goals, we will:

- Measure and report an increase in the number of libraries using the toolkit
- Measure and report an increase in the number of state libraries, R&E networks, and tribal libraries using the toolkit
- Collect and measure the impact of the toolkit on E-rate applications for public libraries
- Continue to collect toolkit evaluations from end users and Broadband Improvement Plans

Our work plan involves several partners and subject matter experts with whom we will work to accomplish our goals. Our proposal includes letters of support and collaboration from the Library and Information Technology Association (LITA) of the American Library Association, State Library organizations (Alaska State Library, Arizona State Library, Archives and Public Records, Texas State Library and Archives Commission, Nebraska Library Commission, and Washington State Library), state and regional R&E networks (MERIT, OneNet, KINBER, Network Nebraska, and Pacific Northwest Gigapop), and organizations serving rural libraries (Association of Rural & Small Libraries). Further, there are letters of support and collaboration from thought leaders like Dr. Marcia Mardis from the Florida State University School of Information, Dr. Jon Gant from the North Carolina Central University School of Library and Information Sciences, Digital Inclusion Library Consultant Nicole Umayam from the Arizona

State Library Archives and Public Records, Sharon Strover from the Technology and Information Policy Institute at the University of Texas, and Matt Rantanen from Tribal Digital Village.

Diversity Plan

The research project will engage a diverse group of public libraries in rural, tribal, and urban areas in participatory design work to revise and disseminate the toolkit and to ensure that scaling and improvement is informed by community input. This project will focus on two key populations in terms of library services and broadband: rural and tribal. A third group will also be explored: technologically under-resourced urban libraries.

Our partnership with rural libraries will be founded on the relationships with the 47 rural libraries established in the TGL grant project. Further, we will partner with the Association for Rural & Small Libraries to identify rural libraries to work with and to disseminate the toolkit.

The project team recognizes the sensitive nature of working with sovereign tribal nations, and will proactively involve key organizations and people from related organizations to ensure that all aspects of the project, including the approach, specific activities, and outcomes are of true value to tribal participants and are responsive to needs they identify. During the project, we will build upon the relationships we established with 11 tribal libraries in the initial TGL project. Matt Rantanen from the Southern California Tribal Chairman's Association and Nicole Umayum from the Arizona State Library, Archives and Public Records (who will serve on our advisory board), with their deep backgrounds in tribal needs including digital inclusion and telecommunications projects, will act as key advisors and collaborators. We will also collaborate with ATALM, State Library Agencies with tribal outreach efforts, and R&E network partners working with tribes. Even though much of the focus of this project is on "train the trainer" activities to help scale the toolkit, it also includes a continuation of the one-to-one tribal site visits performed in the first grant, ideally involving local State Library and R&E network staff who are familiar with their CAIs and their unique needs.

In a presentation at the 2020 Public Library Association conference, Native presenters underscored the importance of bringing value to tribes, as well as acting with respect for the history, culture, and other unique qualities of each sovereign nation.[18] In the process of engaging with tribal communities in Alaska, Arizona, New Mexico, Oklahoma, South Dakota, and Washington State, the TGL pilot project team began a dialog prioritizing shared trust and participant value for the time spent. In fall of 2019, original TGL project member Carson Block presented the toolkit at the U.S. Department of Interior-sponsored National Tribal Broadband Summit. The project team will build further upon this dialog and increase the gains for tribal libraries, particularly in creating more awareness about the toolkit and helping to apply the concepts to improve the quality of tribal library technology, create shared understandings in communications between tribal library and technology staff, equip tribal libraries for technological advocacy, and more.

[18] "Supporting Tribal Libraries: PLA2020 session offers tips for purposeful outreach," *American Libraries Magazine*, February 28, 2020. https://americanlibrariesmagazine.org/blogs/the-scoop/supporting-tribal-libraries-pla-2020/.

To expand the toolkit's reach into those urban libraries with gaps in technology or resources, we will partner with thought leaders in the urban library space to: 1) explore whether there are urban libraries that may benefit from the toolkit; 2) identify those libraries; and 3) connect with urban libraries to disseminate the toolkit. To this end, we have reached out to the Urban Libraries Council and Urban Librarians Unite to explore possible partnerships.

Broad Impact

Widespread implementation of the TGL toolkit will have a broad, positive impact on rural, tribal, and under-resourced urban libraries. Of the libraries that participated in the TGL project, nearly 90% cited improvements to their broadband connection knowledge, 77% cited improvements in their knowledge of their WiFi network, and 61% reported an increase in their knowledge of broadband funding opportunities. Moreover, a full 100% of the participating libraries would recommend the toolkit process to other libraries.

By strengthening librarian technical broadband skills, this project aims to empower rural, tribal, and under-resourced urban library practitioners to become more savvy and effective consumers, advocates, and providers of high-quality internet access and digital services to the communities they serve.

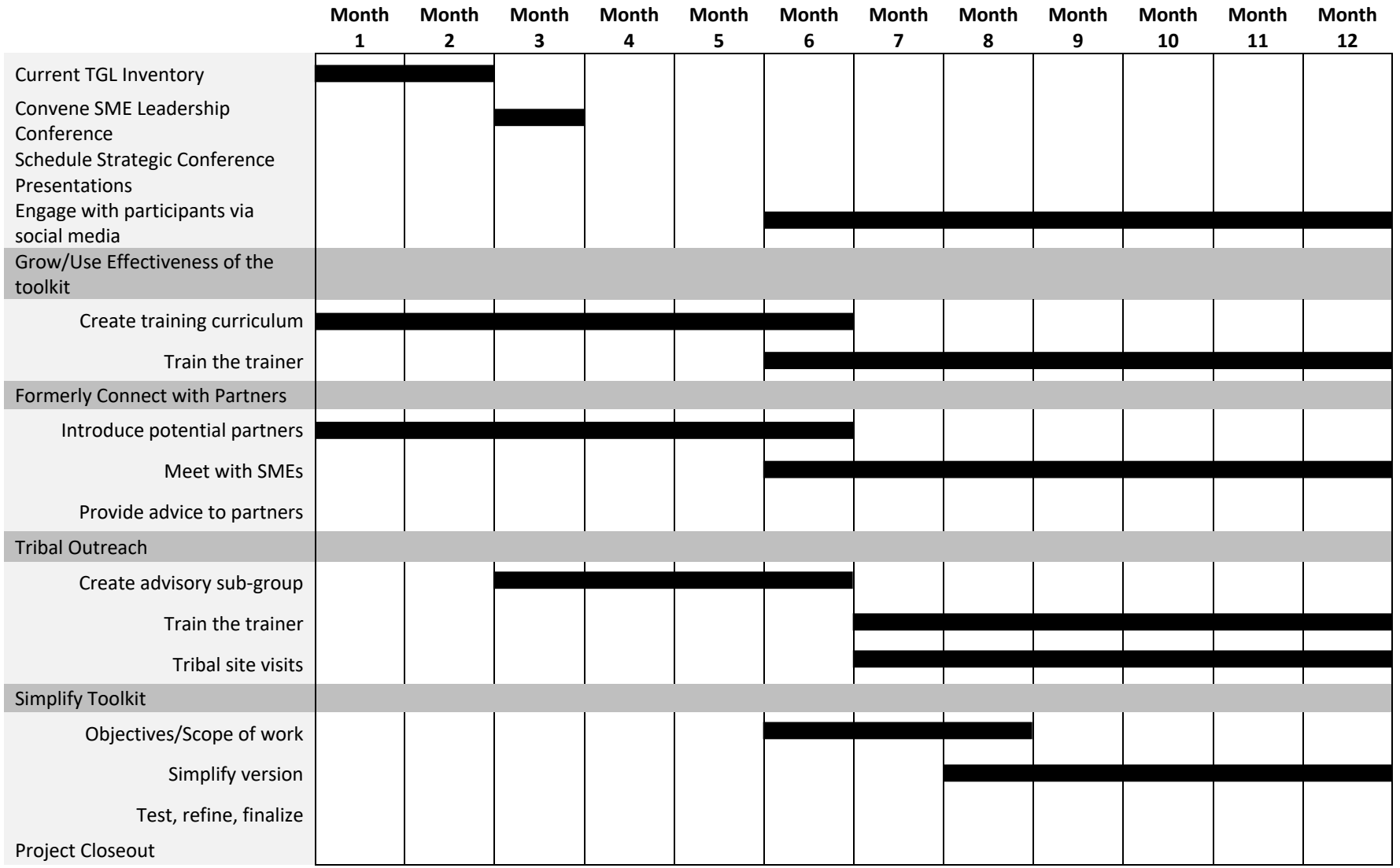
After utilizing the assessment tool to conduct a library broadband "check-up," together with a networking engineer from the R&E networking community, participating library staff will have the skills and knowledge to answer the following key questions about their libraries' broadband and internet access infrastructure:

- What is the type, size, cost, and provider of my current internet connection? Is my library getting the bandwidth throughput it is paying for and is the cost competitive?
- What are the various types of internet connections available and who provides the various services in the area?
- What is the best option for meeting the library's current and future bandwidth demand?
- Is the library's interior network wiring and wireless infrastructure sufficient to meet current and future demands? What can be done to improve internal connections to advance the library's internet access?
- How are other libraries using broadband in innovative ways to deliver economic development, learning healthcare, and access to government services opportunities to their communities?

By engaging state library agencies, R&E networks, and other tribal and public library community stakeholders throughout this project, the resources created will be architected from the ground up to be integrated into sustainably funded existing initiatives within our partner organizations.

Library staff involved in the pilot will participate in a pre-assessment to self-identify and assess their knowledge of E-rate, library networking infrastructure, and other broadband-related topics. A post-assessment also will be conducted to measure their learning at the end of the project.

Year 1


Month 1
Month 2
Month 3
Month 4
Month 5
Month 6
Month 7
Month 8
Month 9
Month 10
Month 11
Month 12
Current TGL Inventory
Convene SME Leadership Conference
Schedule Strategic Conference Presentations
Engage with participants via social media
Grow/Use Effectiveness of the toolkit
Create training curriculum
Train the trainer
Formerly Connect with Partners
Introduce potential partners
Meet with SMEs
Provide advice to partners
Tribal Outreach
Create advisory sub-group
Train the trainer
Tribal site visits
Simplify Toolkit
Objectives/Scope of work
Simplify version
Test, refine, finalize
Project Closeout

Year 2


Month 13
Month 14
Month 15
Month 16
Month 17
Month 18
Month 19
Month 20
Month 21
Month 22
Month 23
Month 24
Current TGL Inventory
Convene SME Leadership Conference
Schedule Strategic Conference Presentations
Engage with participants via social media
Grow/Use Effectiveness of the toolkit
Create training curriculum
Train the trainer
Formerly Connect with Partners
Introduce potential partners
Meet with SMEs
Provide advice to partners
Tribal Outreach
Create advisory sub-group
Train the trainer
Tribal site visits
Simplify Toolkit
Objectives/Scope of work
Simplify version
Test, refine, finalize
Project Closeout

DIGITAL PRODUCT FORM

INTRODUCTION

The Institute of Museum and Library Services (IMLS) is committed to expanding public access to digital products that are created using federal funds. This includes (1) digitized and born-digital content, resources, or assets; (2) software; and (3) research data (see below for more specific examples). Excluded are preliminary analyses, drafts of papers, plans for future research, peer-review assessments, and communications with colleagues.

The digital products you create with IMLS funding require effective stewardship to protect and enhance their value, and they should be freely and readily available for use and reuse by libraries, archives, museums, and the public. Because technology is dynamic and because we do not want to inhibit innovation, we do not want to prescribe set standards and practices that could become quickly outdated. Instead, we ask that you answer questions that address specific aspects of creating and managing digital products. Like all components of your IMLS application, your answers will be used by IMLS staff and by expert peer reviewers to evaluate your application, and they will be important in determining whether your project will be funded.

INSTRUCTIONS

If you propose to create digital products in the course of your IMLS-funded project, you must first provide answers to the questions in **SECTION I: INTELLECTUAL PROPERTY RIGHTS AND PERMISSIONS.** Then consider which of the following types of digital products you will create in your project, and complete each section of the form that is applicable.

SECTION II: DIGITAL CONTENT, RESOURCES, OR ASSETS

Complete this section if your project will create digital content, resources, or assets. These include both digitized and born-digital products created by individuals, project teams, or through community gatherings during your project. Examples include, but are not limited to, still images, audio files, moving images, microfilm, object inventories, object catalogs, artworks, books, posters, curricula, field books, maps, notebooks, scientific labels, metadata schema, charts, tables, drawings, workflows, and teacher toolkits. Your project may involve making these materials available through public or access-controlled websites, kiosks, or live or recorded programs.

SECTION III: SOFTWARE

Complete this section if your project will create software, including any source code, algorithms, applications, and digital tools plus the accompanying documentation created by you during your project.

SECTION IV: RESEARCH DATA

Complete this section if your project will create research data, including recorded factual information and supporting documentation, commonly accepted as relevant to validating research findings and to supporting scholarly publications.

SECTION I: INTELLECTUAL PROPERTY RIGHTS AND PERMISSIONS

A.1 We expect applicants seeking federal funds for developing or creating digital products to release these files under open-source licenses to maximize access and promote reuse. What will be the intellectual property status of the digital products (i.e., digital content, resources, or assets; software; research data) you intend to create? What ownership rights will your organization assert over the files you intend to create, and what conditions will you impose on their access and use? Who will hold the copyright(s)? Explain and justify your licensing selections. Identify and explain the license under which you will release the files (e.g., a non-restrictive license such as BSD, GNU, MIT, Creative Commons licenses; RightsStatements.org statements). Explain and justify any prohibitive terms or conditions of use or access, and detail how you will notify potential users about relevant terms and conditions.

Promoting open-source reuse is at the heart of our project proposal. The key deliverable for the project is an updated version of the Toward Gigbit Libraries Toolkit (currently available at the project site at http://internet2.edu/tgl/). The toolkit was released under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License to ensure easy and open access to all content in the toolkit. Any updates to the toolkit as a result of the current grant application will be licensed under the same terms.

A.2 What ownership rights will your organization assert over the new digital products and what conditions will you impose on access and use? Explain and justify any terms of access and conditions of use and detail how you will notify potential users about relevant terms or conditions.

As licensor, Internet2 will require anyone accessing and using the digital product to do so on a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. Internet2 will communicate the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License to potential users both via notice on the website and in the toolkit. Internet2 designates such license because we want to maximize access and promote reuse.

A.3 If you will create any products that may involve privacy concerns, require obtaining permissions or rights, or raise any cultural sensitivities, describe the issues and how you plan to address them.

We do not anticipate creating any products that would involve privacy concerns, require obtaining permissions or rights, or that would raise any cultural sensitivities.

SECTION II: DIGITAL CONTENT, RESOURCES, OR ASSETS

A.1 Describe the digital content, resources, or assets you will create or collect, the quantities of each type, and the format(s) you will use.

The toolkit is a single workbook-style document electronically published and distributed in a word-processing file format. The format allows users to download the form and use it electonically, print a physical copy for use, or to copy and paste the content for use as authorized under the Creative Commons NonCommercial-ShareAlike 4.0 International License.

The team will also create toolkit training materials which may include slides and handouts.

A.2 List the equipment, software, and supplies that you will use to create the digital content, resources, or assets, or the name of the service provider that will perform the work.

The toolkit is created using standard desktop and laptop computers and word processing services and software (incuding Google Docs, Microsoft Word, and Microsoft PowerPoint). All work is performed directly by the project team named in the grant.

A.3 List all the digital file formats (e.g., XML, TIFF, MPEG, OBJ, DOC, PDF) you plan to use. If digitizing content, describe the quality standards (e.g., resolution, sampling rate, pixel dimensions) you will use for the files you will create.

.docx
.ppx
.pdf (for copies of training materials)

Workflow and Asset Maintenance/Preservation

B.1 Describe your quality control plan. How will you monitor and evaluate your workflow and products?

The project team will share responsibility for document creation, proofreading, corrections and final versions. Typically, one team member will take responsibility for a section of the document (either to create or revise) and another team member will review to proofread and suggest edits. Depending on the needs, the document may go through several steps of back-and-forth until there is consensus that the needs are met and the document is complete. For final versions, the document is provided to others at Internet2 for review and final suggestions. Workflow and products will be regularly reviewed by the project team with community input with modifications and updates made as needed. Pre- and Post-assessment surveys of libraries and working groups will also be performed.

B.2 Describe your plan for preserving and maintaining digital assets during and after the award period. Your plan should address storage systems, shared repositories, technical documentation, migration planning, and commitment of organizational funding for these purposes. Please note: You may charge the federal award before closeout for the costs of publication or sharing of research results if the costs are not incurred during the period of performance of the federal award (see 2 C.F.R. § 200.461).

Internet2 is currently the host for the digitial assets from the previous project (http://internet2.edu/tlg/), and provides free and open access. Internet2 will continue to host all digital assets for the project.

Metadata

C.1 Describe how you will produce any and all technical, descriptive, administrative, or preservation metadata or linked data. Specify which standards or data models you will use for the metadata structure (e.g., RDF, BIBFRAME, Dublin Core, Encoded Archival Description, PBCore, PREMIS) and metadata content (e.g., thesauri).

n/a

C.2 Explain your strategy for preserving and maintaining metadata created or collected during and after the award period of performance.

n/a

C.3 Explain what metadata sharing and/or other strategies you will use to facilitate widespread discovery and use of the digital content, resources, or assets created during your project (e.g., an API [Application Programming Interface], contributions to a digital platform, or other ways you might enable batch queries and retrieval of metadata).

n/a

Access and Use

D.1 Describe how you will make the digital content, resources, or assets available to the public. Include details such as the delivery strategy (e.g., openly available online, available to specified audiences) and underlying hardware/software platforms and infrastructure (e.g., specific digital repository software or leased services, accessibility via standard web browsers, requirements for special software tools in order to use the content, delivery enabled by IIIF specifications).

As well as being openly available online at the project site (currently http://internet2.edu/tgl/), the project team will promote the toolkit via multiple social media outlets (and other forms of electronic awareness, including discussion lists) and by convening stakeholders at partner sites and organizations, conferences, and one-on-one (during site visits with libraries). As well, an "explainer" video describing the toolkit (https://youtu.be/PXWv3-HYm-I) has been viewed more than 900 times (as of winter 2020) and will continue to be used to promote access to the toolkit.

D.2. Provide the name(s) and URL(s) (Universal Resource Locator), DOI (Digital Object Identifier), or other persistent identifier for any examples of previous digital content, resources, or assets your organization has created.

http://internet2.edu/tgl/

SECTION III: SOFTWARE

General Information

A.1 Describe the software you intend to create, including a summary of the major functions it will perform and the intended primary audience(s) it will serve.

n/a

A.2 List other existing software that wholly or partially performs the same or similar functions, and explain how the software you intend to create is different, and justify why those differences are significant and necessary.

n/a

Technical Information

B.1 List the programming languages, platforms, frameworks, software, or other applications you will use to create your software and explain why you chose them.

n/a

B.2 Describe how the software you intend to create will extend or interoperate with relevant existing software.

n/a

B.3 Describe any underlying additional software or system dependencies necessary to run the software you intend to create.

n/a

B.4 Describe the processes you will use for development, documentation, and for maintaining and updating documentation for users of the software.

n/a

B.5 Provide the name(s), URL(s), and/or code repository locations for examples of any previous software your organization has created.

n/a

Access and Use

C.1 Describe how you will make the software and source code available to the public and/or its intended users.

n/a

C.2 Identify where you will deposit the source code for the software you intend to develop:

Name of publicly accessible source code repository:

n/a

URL:

n/a

SECTION IV: RESEARCH DATA

As part of the federal government's commitment to increase access to federally funded research data, Section IV represents the Data Management Plan (DMP) for research proposals and should reflect data management, dissemination, and preservation best practices in the applicant's area of research appropriate to the data that the project will generate.

A.1 Identify the type(s) of data you plan to collect or generate, and the purpose or intended use(s) to which you expect them to be put. Describe the method(s) you will use, the proposed scope and scale, and the approximate dates or intervals at which you will collect or generate data.

n/a

A.2 Does the proposed data collection or research activity require approval by any internal review panel or institutional review board (IRB)? If so, has the proposed research activity been approved? If not, what is your plan for securing approval?

n/a

A.3 Will you collect any sensitive information? This may include personally identifiable information (PII), confidential information (e.g., trade secrets), or proprietary information. If so, detail the specific steps you will take to protect the information while you prepare it for public release (e.g., anonymizing individual identifiers, data aggregation). If the data will not be released publicly, explain why the data cannot be shared due to the protection of privacy, confidentiality, security, intellectual property, and other rights or requirements.

n/a

A.4 What technical (hardware and/or software) requirements or dependencies would be necessary for understanding retrieving, displaying, processing, or otherwise reusing the data?

n/a

A.5 What documentation (e.g., consent agreements, data documentation, codebooks, metadata, and analytical and procedural information) will you capture or create along with the data? Where will the documentation be stored and in what format(s)? How will you permanently associate and manage the documentation with the data it describes to enable future reuse?

n/a

A.6 What is your plan for managing, disseminating, and preserving data after the completion of the award-funded project?

n/a

A.7 Identify where you will deposit the data:

Name of repository:

n/a

URL:

n/a

A.8 When and how frequently will you review this data management plan? How will the implementation be monitored?

n/a