

AGENDA
Eau Claire County
Broadband Committee
Thursday, December 16, 2021
4:00 P.M.
Remote Meeting via Webex Events

Those wishing to make public comments must submit their name and address no later than 30 minutes prior to the meeting to rod.eslinger@co.eau-claire.wi.us

Comments are limited to 3 minutes; you will be called on during the public comment section of the meeting. Written comments will also be accepted and should be submitted to the e-mail address listed above.

Join WebEx Meeting: <https://eauclairecounty.webex.com> Meeting ID: 167 775 1184, Password: qMPYqiCn574

*Meeting audio can be listened to using this Audio conference dial in information.

Public Access: Dial in Number: 1-415-655-0001 Access Code: 167 775 1184 ##

**Mute your device upon entry*

1. Call to order and confirmation of meeting notice.
2. Roll Call
3. Public Comment (limit to 3 minutes per person)
4. County ARPA Fund Support: Dave Hayden - **Discussion**
5. Internet Service Provider (ISP) Updates – **Discussion/Action**
6. Community Engagement Updates - **Discussion**
7. SpaceX Starlink Pilot Project Update – **Discussion/Action**
8. Digital Inclusion –
 - a. Resolution to create a coalition committed to county-wide digital inclusion – **Discussion/Action**
 - b. Federal Infrastructure Bill – Broadband – **Discussion**
 - c. Application to the UWEC Community Leadership Class – **Discussion/Action**
 - d. United Way/Broadband Committee - Digital Inclusion Partnership Opportunity – **Discussion/Action**
9. Digital Literacy and Equity Updates – **Discussion**
10. Review/Approval of October 21, 2021 and November 18, 2021 Committee Meeting Minutes – **Discussion/Action**
11. Next Steps and future meetings – **Discussion/Action**
 - a. Future Meeting: January 20, 2022.
12. Adjourn

PLEASE NOTE: Upon reasonable notice, efforts will be made to accommodate the needs of individuals with disabilities through sign language, interpreters or other auxiliary aids. For additional information or to request the service, contact the County ADA Coordinator at 839-4710, (FAX) 839-1669 or 839-4735, TTY: use Relay (711) or by writing to the ADA Coordinator, Human Resources, Eau Claire County Courthouse, 721 Oxford Avenue, Eau Claire, WI 54703.

Eau Claire County Broadband Committee: Digital Literacy Program

Please submit the following information to Donald Mowry via mail (S8821 County Line Rd, Mondovi, WI) or email (donald.mowry@co.eau-claire.wi.us), or phone (715-875-4206 leave a message if no answer) to allow us to match you with a Digital Coach/Navigator. Thank you!

Name of Community Member

Community Member Preferred Initial Contact (phone/email)

Preferred Language

What Kind of Device Are You Currently Using?

- Smartphone
- Tablet
- Laptop/Desktop
- I don't have a device
- Other:

Please describe if "Other"

Type of Issue or Learning Need

- Device Hardware (e.g., I need help turning on my smartphone)
- Home Connectivity (e.g., I need help getting connected to an Internet Service Provider)
- Digital Skills (e.g., I need to get into my email)
- Research (e.g., I need help finding information about a topic)
- Other:

Please describe if "Other"

How did you hear about this program?

Please feel free to add any additional comments below that may be helpful in matching you to a Digital Literacy Coach/Navigator.

Intake Form

Use this form to collect general information about your community member's needs

***Required**

Name of Community Member *

Your answer

Community Member Contact (phone/email) *

Your answer

Preferred Language

Your answer

What Kind of Device Are You Using? *

- Smartphone
- Tablet
- Laptop/Desktop
- I don't have a device
- Other:

Please describe if "Other"

Your answer

Type of Issue *

- Device Hardware (e.g. I need help turning on my smartphone)
- Home Connectivity (e.g. I need help finding an Internet Service Provider)
- Digital Skills (e.g. I need to get into my email)
- Research (e.g. I need help finding information about my neighborhood)
- Other:

This project was made possible in part by the [Institute of Museum and Library Services](http://www.instituteforlibraries.org/) grant number [LG-248566-OLS-20](https://www.imls.gov/Grants/Grants-Details/2015-2016/LG-248566-OLS-20).



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Please describe if "Other"

Your answer

How did you hear about this program? *

Your answer

Assigned Digital Navigator and Organization? *

Your answer

Additional notes

Your answer

This project was made possible in part by the [Institute of Museum and Library Services](#) grant number [LG-248566-OLS-20](#).



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BROADBANDUSA
CONNECTING AMERICA'S COMMUNITIES

Planning a Community Broadband Roadmap: A Toolkit for Local and Tribal Governments

APRIL 2016



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The Project Team would like to thank the other members of the BroadbandUSA team for their efforts and support.
.....

Disclaimer

Any reference in this document to any non-government entity, product, service, or information does not constitute an endorsement or recommendation by the U.S. Department of Commerce, the National Telecommunications and Information Administration, or any of its employees.

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FOREWORD

The National Telecommunications and Information Administration (NTIA), part of the U.S. Department of Commerce, is the Executive Branch agency principally responsible for advising the President on telecommunications and information policy issues. NTIA's BroadbandUSA team provides expert advice and field-proven tools for assessing broadband adoption, planning new infrastructure and engaging a wide range of partners in broadband projects. This publication is one in a series of Toolkits that provides advice to local and tribal governments on these topics.

Since 2009, NTIA's Broadband Technology Opportunities Program (BTOP) awarded and managed more than 200 broadband development projects funded through the American Recovery and Reinvestment Act (Recovery Act). These projects included:

- ✦ **Infrastructure projects** to expand broadband access in unserved and underserved areas and to reach community anchor institutions such as schools, libraries and hospitals. Recipients deployed over 116,000 miles of new and upgraded fiber and wireless infrastructure were deployed in middle-mile and last-mile projects.
- ✦ **Public Computer Center (PCC) projects** to provide the public and vulnerable populations with access to computers, computer training, job training and educational resources. PCCs offering these training programs are housed in libraries, health clinics, community centers, and tribal centers or government facilities. BTOP-funded programs trained more than 4 million people.
- ✦ **Sustainable Broadband Adoption (SBA) projects** to support initiatives that promote broadband adoption, especially among vulnerable population groups where broadband technology traditionally has been underutilized. Projects offer low-cost access to broadband devices and assistance choosing and signing up for broadband subscriptions. SBA projects added over 671,000 new broadband subscribers.

BroadbandUSA is publishing a series of guides and toolkits for communities determined to take steps to secure the robust broadband services and digital literacy skills needed to be competitive in today's global economy. These publications provide practical advice for developing programs that will successfully meet the current and future broadband needs of communities. Reflecting the tips and best practices NTIA has observed through its oversight of broadband grants, BroadbandUSA has developed additional toolkits for local and tribal governments, including:

- ✦ *Planning a Community Broadband Roadmap.*
- ✦ *The Power of Broadband Partnerships.*
- ✦ *Implementing the Community's Broadband Network Vision.*
- ✦ *Strategizing for Broadband Network Sustainability.*

BroadbandUSA is NTIA's program that provides expert advice and field-proven tools for assessing broadband adoption, planning new infrastructure and engaging a wide variety of partners in infrastructure projects. BroadbandUSA also brings stakeholders together to solve problems, improve broadband policies, share best practices, connect communities to other federal agencies, and provide funding sources to improve coordination among agencies. BroadbandUSA offers online and in-person technical assistance to communities; hosts regional workshops around the country; and publishes guides and tools that provide communities with proven solutions to address problems in broadband planning, financing, construction and operations. If you are interested in receiving assistance from BroadbandUSA, please contact us at broadbandusa@ntia.doc.gov or 202-482-2048. For more information about BroadbandUSA, visit our website at http://www2.ntia.doc.gov/new_BroadbandUSA.

INTRODUCTION TO BROADBAND PLANNING

This Toolkit presents the planning steps necessary to create a Community Broadband Roadmap, offers tips and advice from BTOP grantees and provides links to resources and tools. The goal of this publication is to help communities expand broadband access locally to create jobs, improve educational opportunities, promote economic development, spur private investment and facilitate the delivery of essential social services to their citizens.

What is a Community Broadband Roadmap?

A Community Broadband Roadmap describes the community's vision for a broadband initiative, the anticipated benefits and the strategy and action plan necessary to carry out that vision. Local and tribal government leaders are ideally positioned to convene stakeholders, assess needs, determine broadband gaps, and leverage assets. The examples in this Toolkit describe various options by which local and tribal leaders have developed roadmaps. The steps outlined are designed to foster a common broadband vision, prioritize needs and interests and catalyze stakeholder commitment to invest in the needed physical infrastructure, organizational capacity and human capital assets of the community.

A well-designed Community Broadband Roadmap documents a community's strategic vision and goals, analyzes existing community resources and needs and guides the tactical plans to realize this vision. The benefits of developing a Community Broadband Roadmap extend far beyond developing a technology plan, business model or project plan. It helps identify new opportunities for partnerships and collaborations that can spur additional businesses, programs and economic growth. While robust Community Broadband Roadmaps may have much in common, the best roadmaps reflect each community's unique priorities, resources and needs.

How to Use the Toolkit

This Toolkit provides advice on developing a Community Broadband Roadmap for building broadband networks, enhancing public computer centers, expanding broadband to unserved areas, encouraging public-private partnerships and promoting broadband connectivity to homes, businesses and institutions.

Each section below contains:

- ✦ Advice on planning a Broadband Community Roadmap.
- ✦ Best practices, as identified by BTOP recipients at NTIA seminars and workshops.
- ✦ Examples from recipients that demonstrate these best practices.
- ✦ Available online resources.

This advice will assist public officials, planners, citizen groups and other stakeholders in making their broadband project — however grand or small — the best it can be.

Six Steps: Planning a Community Broadband Roadmap

Regardless of the scale of a broadband project, the key planning steps, discussed in more detail below, are to:

1. Assemble a team to develop a community broadband vision.
2. Assess communities' broadband-related resources, gaps and needs.
3. Engage local stakeholders.
4. Choose appropriate technology.
5. Select a business or organizational model (the framework for implementation).
6. Develop project plan(s), *e.g.*, implementation and financial plans.



How to: Envision a Broadband Roadmap

See the Appendix to review the multi-year steps taken to advance a broadband vision by:

- ✦ A group of county governments
- ✦ A large urban metropolis.

Through its management of more than 200 BTOP projects and 56 State Broadband Initiative grants that supported over 200 planning teams across the country, NTIA has identified the key characteristics of successful community broadband roadmap development:

- ✦ **Build the roadmap from the ground up:** Successful planning engages constituents to understand their needs. Technology alone will not solve a problem. Leaders should hold public meetings and talk to residents, local businesses and community institutions. They should share findings from these meetings as well as successes and lessons learned from previous broadband initiatives with their constituents.
- ✦ **Take time to develop the roadmap:** Identifying resources, needs and technology requires focus and commitment. The Appendix shows the timeframe that two BTOP recipients took to establish the process, including forming committees and task forces; engaging the community in discussions about the benefits of better broadband; establishing relationships and partnerships; gathering data; creating a vision; and developing ongoing support.
- ✦ **Seek strong partnerships:** Why go it alone? Partners are able to extend the impact and reach of a broadband initiative, provide resources and personnel and share project costs.

Tools and Resources

- ✓ The Planning Checklist on page 29 summarizes activities related to broadband planning.
- ✓ The Resource section on page 24 contains links to assessment forms, surveys, and other planning tools developed by governments, researchers and non-profits.

- ✦ **Gather good data:** From the beginning, community leaders should incorporate data-driven research into the planning process. Data helps identify the broadband projects that the community needs most, build the funding case and evaluate the project's results. A data-gathering plan for the duration of the project is critical.
- ✦ **Identify broadband champions:** Good intentions are not a substitute for leaders who can direct the project, focus everyone on the goal and commit to the hard work. A network of broadband champions must be encouraged and include leaders who can articulate how broadband will further a community's economic and social goals.

STEP 1: ASSEMBLE A TEAM TO DEVELOP A VISION

STEP 1

Assemble a Team to Develop a Community Broadband Vision

STEP 2

Assess Broadband Resources, Gaps and Needs

STEP 3

Engage Stakeholders

STEP 4

Evaluate Technology Options

STEP 5

Select an Organizational Model

STEP 6

Create the Project Plan

Building an effective Community Broadband Roadmap takes a mix of skills. Local leaders can jump-start the process by empowering a small team to take on the task. The composition of the team will differ depending upon the mission, as illustrated by the following examples:

- ✦ **Government enhancements:** If a tribe or local government decides its priority is to enhance its e-government applications and online services or public safety, the planning team should include the IT department and a representative from each affected government department.
- ✦ **Regional economic growth:** If the goal is to incorporate broadband more widely into local or regional economic development initiatives, the planning team could be formed from existing departments or organizations (*e.g.*, economic development) or from a newly convened group or task force. Teams should include local governments, telecommunications providers, economic development organizations, educators, business leaders, non-profits, institutions, chamber of commerce representatives, grass-roots organizations and concerned citizens.
- ✦ **Institutional connectivity:** If the primary push for better broadband is coming from institutions such as hospitals, universities and research centers, local schools, colleges or businesses, the initial planning sessions must include representatives from each of these groups.
- ✦ **Enhancing educational outcomes:** If the intent is to strengthen educational outcomes and build a skilled workforce, educators, library leaders, parents and managers of non-profit training programs should be included on the planning team.

Each team needs to include individuals with extensive experience in telecommunications, information technology (IT), finance, outreach, marketing and business, as well as individuals who understand the community needs and goals

(*e.g.*, economic and workforce development, education, healthcare). Teams could form subcommittees to focus on each area. A strong leader or leaders are needed to resolve divergent views, create a strategy and implement a plan.

The team should develop hypotheses about how broadband will impact the community and build research methods to test assumptions. The team also must decide upon the analytical framework to analyze the costs, risks and potential benefits to the local economy, institutions and residents.

Tribal, county, state and local governments that have been most successful in this first phase shared these best practices:

- ✦ **Rely on project champions:** Identify creative, dedicated leader or leaders who can advocate effectively for the broadband initiative and keep planning activities moving forward.
- ✦ **Be flexible:** Timeframes and goals should be adjusted as planning work progresses.
- ✦ **Network:** Other tribal or government broadband projects should be contacted or visited to find out what worked and did not work in other communities.
- ✦ **Leverage other planning efforts:** Many state or regional planning groups offer guides, research, frameworks and planning grants that local governments and tribes can utilize.
- ✦ **Be prepared:** The earlier in the process teams do research and have preliminary plans ready, the better able they are to pursue funding or partnership opportunities.
- ✦ **Engage the community:** Grass-roots organizations, economic development groups and foundations with strong ties to local neighborhoods and communities should be recruited into the planning effort.

Tribal, local and county governments may choose to organize and fund this planning phase themselves; others might work through economic development organizations, state or local foundations or state governments to fund opportunities.

The examples below illustrate how three distinct types of communities implemented these best practices to design Community Broadband Roadmaps to meet the unique needs of their respective communities.

COMMUNITY PLANNING SPOTLIGHT: MENOMINEE NATION, WISCONSIN

Purpose: *Plan for the upgrade and expansion of public computer facilities and adoption training for the Menominee Indian Tribe and nearby residents*

Planning Strategy: *Rely on broadband champions to develop a broadband roadmap for the Tribe and network to learn what worked in similar communities*

For years, a group of technical experts from tribal institutions, known informally as the “IT summit group,” met regularly to discuss what they could do collectively to bring high-speed broadband services to people and institutions on the reservation.

They envisioned a Comprehensive Community Technology Center (CTC) (<http://www2.ntia.doc.gov/grantee/college-of-menominee-nation>) on the college campus where people from the community would be able to learn basic computing skills, and students could earn technical degrees and receive higher-level training. To ensure the CTC would meet community needs, the group met with tribal governmental departments, tribal elders, the chamber of commerce, the tribal day care center, the school district and others to ascertain the types of courses that should be offered.

The IT summit group identified the community’s needs through these meetings, leading it to team up with the University of Wisconsin-Extension’s (UWEX) Center for Community Technology Solutions and partnering in its existing initiative, *Building Community Capacity through Broadband*: <http://www2.ntia.doc.gov/grantee/university-of-wisconsin-system-sba>. That initiative provided training using mobile labs and workshops. As a result of that experience, public demand grew for a new CTC facility. The director and planning team from the IT summit group visited public computer centers in other cities to see how they were designed and how staff worked with minority and elderly students.

At one point, the IT summit group also considered the feasibility of building its own broadband network, but ultimately decided to work with a private cable operator. The IT summit group aggregated demand for the private cable operator, which enabled the Tribe to negotiate highly favorable terms in a long-term contract for high-speed broadband for the CTC, tribal government offices, other tribal institutions and homes on the Menominee reservation.

The planing effort resulted in the successful completion of the 10,000 square foot campus CTC and upgrades of broadband capacity to serve the more than 5,000 members of the Menominee Tribe. People from neighboring counties also benefitted with 100 megabit broadband service, skills-building activities, adoption training classes career assistance and special workshops.

Report:

@ More information on the CTC’s success is available here: <https://www.ntia.doc.gov/blog/2014/public-computer-center-college-menominee-nation-wisconsin>

“You have to have a community champion, and the College was the leader here. Our working relationships were built over years of communicating in an atmosphere of openness and trust, supported by informal as well as formal planning processes.”

— Ron Jurgens, Director of Institutional Planning, College of Menominee Nation

COMMUNITY PLANNING SPOTLIGHT: PORT OF CLARKSTON, WASHINGTON

Purpose: *Develop last-mile connectivity for a new industrial park*

Planning Strategy: *Leverage other planning efforts to develop a proposal to build necessary broadband infrastructure and be fully prepared to make a case for funding*

During construction of the industrial park at Washington State's Port of Clarkston (<http://portofclarkston.com/>), the Director of the project identified interconnection with a large fiber backbone running across the state as essential to attracting future tenants. Serving as the local broadband "champion," she approached the Asotin County local government about jointly applying for a grant from the Washington State Broadband Office to conduct a feasibility study on bringing broadband capacity (<http://portofclarkston.com/index.php?page=broadband>) to the industrial park. The county government participated in the grant as part of its economic development initiative.

The planning team included county residents as stakeholders alongside regional businesses. The partners received a planning grant from the state and produced a study that included a county-needs assessment, broadband education activities, application development strategies, "last-mile" connectivity solutions, a preliminary fiber interconnection engineering plan and construction cost estimates. The plan also included organizational and operational recommendations and funding strategies for future network projects.

Based in part on the plan's rigor and detail, Washington State's Community Economic Revitalization Board approved a low-interest loan and funded construction of the fiber-based broadband infrastructure at the Port of Clarkston. This upgraded broadband infrastructure attracted new tenants to the industrial park, which increased job opportunities available in Asotin County.

Planning study:

@ The Asotin County broadband planning study is available here: <http://portofclarkston.com/uploads/Broadband/Asotin%20County%20Broadband%20Planning%20Study%20-%202013.pdf>



How to: Encourage Broadband Planning in Rural Communities

"Communities that need the most help are those that lack broadband leadership, so we try to build it from the inside. Without somebody embedded in the community with those networks and relationships, it's very hard to move the needle. Our idea is to find local champions to carry the ball because this is a long-term proposition.

"Measurement and assessment should be baked into any project design from the beginning. Gathering valid data on the status quo helps communities, supporters, funders and policy makers understand, build and maintain support for the work."

— Bernadine Joslyn, Blandin Foundation

COMMUNITY PLANNING SPOTLIGHT: Minnesota Intelligent Rural Communities

Purpose: *Launch a comprehensive, scalable, multi-sector approach to encourage broadband adoption by rural residents, small businesses, governments and tribes*

Planning Strategy: *Identify local “broadband champions” and provide them with a framework and support to develop community broadband planning teams charged with setting community technology goals and implementing projects to achieve those goals*

Between 2010 and 2013, ten rural communities in Minnesota assessed the status of local broadband, asked how broadband could help local residents and carried out small-scale broadband projects to meet local needs. These demonstration communities formed part of the Blandin Foundation’s Minnesota Intelligent Rural Communities (MIRC) project (<http://blandinfoundation.org/resources/case-studies/minnesota-intelligent-rural-communities>), which provided funds, equipment and planning tools to help broadband champions identify broadband activities most appropriate to each location.

In one demonstration community, the Leech Lake Band of Ojibwe convened a broadband steering group that identified a major barrier to economic development throughout its 1,000 square-mile territory — low digital literacy among the population, which hampered success for adults in the workplace and students in the classroom. Broadband champions from Head Start, the Boys and Girls Club and three tribal government departments agreed to focus on three projects: technology and training centers for adult and youth populations, a computer recycling program to benefit low-income families, and a geographic information system (GIS) upgrade to manage tribal land and provide enhanced public information.

Cook County, another demonstration community, was building a last-mile broadband network around the time that the MIRC project began. Discussion at the County’s broadband steering committee centered on how to leverage this new resource to increase tourism, improve health outcomes and increase community programming. The broadband steering committee identified broadband champions at key institutions and businesses — the county historical society, tourism office, library, health clinic, public school, radio station and public access organizations. By focusing on highly-targeted initiatives, the County could begin putting media production equipment in places that mattered most, building an on-line digital history archive, enhancing tourism websites for mobile devices and starting remote health visits with seniors at home.

The broadband steering committee formed in the City of Winona, a third demonstration community, recognized that increased broadband access would greatly benefit its growing multi-ethnic community, but only if newly arriving immigrants had access to digital training and equipment. Broadband champions within the city government used MIRC resources to initiate three projects — upgrading the City’s website, deploying Wi-Fi connectivity in government buildings and parks and creating a public relations campaign about the improvements. Broadband advocates at two non-profits enhanced public computer facilities and began a training program targeted to immigrants and refugees.

Overall, local planning groups utilized MIRC to implement more than 100 projects in 11 communities through this process and, along with other statewide community outreach efforts, encouraged more than 56,000 people to sign up for broadband.

Video and projects:

- @ This YouTube video highlights broadband projects in three rural Minnesota communities: https://www.youtube.com/watch?v=SA-vE0qAt-w&list=UUZImwV-Oy0HenS_G-KBB3cA
- @ The list of over 80 community broadband projects could prompt creative broadband adoption projects in other communities: http://broadband.blandinfoundation.org/_uls/resources/DC_Project_Matrix_Nov_2012.pdf

Reports:

- @ *The Minnesota Intelligent Rural Communities — Key outcomes of an innovative rural broadband initiative* is available here: http://broadband.blandinfoundation.org/_uls/resources/MIRC_outcomes_overview_June_2013.pdf
- @ *The Story of the Minnesota Intelligent Rural Communities Initiative: Why? What? So What?* by the Blandin Foundation is available here: http://blandinfoundation.org/_uls/resources/The_Story_of_MIRC_-_Why_What_So_What--10-14-13--Final.pdf

STEP 2: ASSESS BROADBAND RESOURCES, GAPS AND NEEDS

STEP 1

Assemble a Team to Develop a Community Broadband Vision

STEP 2

Assess Broadband Resources, Gaps and Needs

STEP 3

Engage Stakeholders

STEP 4

Evaluate Technology Options

STEP 5

Select an Organizational Model

STEP 6

Create the Project Plan

After assembling a planning team and determining the initial direction of the Community Broadband Roadmap, the next step is to scope out community resources and needs using community surveys, meetings and focus groups. At this point, the objective is to understand existing broadband facilities and resources in the community, confirm what residents and institutions want and figure out what is needed to complete the roadmap.

The activities described below will help planners identify the technologies, partners, organizational models and financing options for broadband projects.

Inventory Local Broadband Resources

To start, teams should consult the following two resources:

- ✦ The National Broadband Map, which provides a high-level summary of the providers and services available in every region and enables broadband service speeds to be tested: <http://www.broadbandmap.gov/>
- ✦ The Connecting America's Communities Map, which provides information on open-access networks, computer labs, training programs funded by BTOP in all 50 states and can be searched by zip code: <http://www2.ntia.doc.gov/BTOPmap/>

Asking questions about the following types of broadband activities will enable the team to develop a deeper understanding of local opportunities:

- ✦ **Service providers:** Who currently provides broadband service to local residents and businesses and at what price and speed? Who provides broadband service to government agencies and community anchor institutions (e.g., schools, libraries, hospitals)? What do they think of customer service and the choice of offerings? Are discounted and/or low-cost subscriptions offered to low-income residents? Are residents using these discounts?
- ✦ **Infrastructure:** Where are the physical network resources (e.g., fiber, conduit, towers) located? What capacity and services do providers offer to residents, institutions and businesses and at what prices? Is dark fiber offered for sale? Is there a middle-mile provider who offers wholesale rates? What speeds are available from broadband providers and are the speed offerings uniform throughout the network? Are cloud services offered? What interconnection arrangements are available?
- ✦ **Public computer centers:** Where are public computer centers located? Are they open to the general public or targeted populations (e.g., public housing residents, students)? What hours do they operate? Are they open evenings and weekends? What training and services do they provide? What assistive technology is available? Is public Wi-Fi available? Where?
- ✦ **Digital literacy and broadband adoption and use:** Where are digital skills classes offered and what types (e.g., basic computer use, job search, media production, network certification)? Is the training targeted to particular segments of the community (e.g., seniors, youth, small businesses)? Is training offered in different languages? Do any organizations offer discounted or refurbished computers to residents in need? Are organizations assisting disadvantaged residents to sign up for broadband service?



How to: Start Your Inventory

The National Broadband Map, Connecting America's Communities Map and state maps will tell you:

- ✦ Neighborhoods served
- ✦ Maximum broadband speeds
- ✦ Technology available
- ✦ Number of providers
- ✦ Community Anchor Institutions (CAIs)
- ✦ Locations of BTOP-funded projects

Conduct a Community Needs Assessment

A community needs assessment involves surveying local government agencies, institutions, businesses and residents about what broadband services they have and what services they need. Teams should ask the following types of questions:

- ✦ Who in the community uses broadband? If people are not using broadband, why not? What are the barriers?
- ✦ Where are people when they go online (*e.g.*, the library, at home) and what equipment do they use (*e.g.*, a home computer, smartphone, a computer center)?
- ✦ Is the existing broadband service and capacity sufficient for residents? How much would people pay for faster or better service?
- ✦ Do local businesses and institutions have access to high-speed broadband? If so, how much do they pay? How does this community compare to similar communities?
- ✦ Do schools, libraries, hospitals and other institutions have access to sufficient bandwidth? Is the capacity adequate to access online multimedia materials, provide e-health services or online education?
- ✦ Who are the innovators in the community? Where are they located? Do they have the connections necessary to create and share their ideas? Education? Arts and culture? Civic applications? New businesses? How will improving broadband access and service affect economic development?

Conducting surveys and meticulously collecting other data at this stage will support the assumptions used in the organizational model and project plan. Tribal and local governments should seek out regional economic development organizations, state broadband offices or other departments, federal agencies and foundations supporting broadband planning activities to find out if resources are available to help fund these activities.

Perform a Gap Analysis

On the basis of the community assessment, broadband planners should identify broadly what is lacking and quantify the extent of the problem. For example:

- ✦ Do significant groups of constituents lack certain digital skills or broadband service?
- ✦ What percent of residents or businesses are dissatisfied with their current broadband service?

- ✦ Do existing networks and broadband speeds need to be upgraded?
- ✦ Do business owners express concern that they cannot find workers with the right skills? What training is needed to meet the needs of employers or business start-ups?

Results from these activities drive the success of broadband projects:

- ✓ **The inventory of local broadband resources** informs the portion of the plan that identifies current broadband providers, digital training programs and other resources serving the community, including potential partners, future users or competitors.
- ✓ **The community needs assessment** determines what services and programs people and organizations want, how much they might use and pay for it and how demand might increase over time.
- ✓ **Engagement with constituents, stakeholders and institutions** refines the overall strategy, reveals additional resources and project partners and identifies the highest priority projects.

Draft an Initial Roadmap

From these steps, the planning group will be able to determine if its hypotheses about community needs are correct and to prioritize subsequent activities. What types of projects fit the need and what path should the roadmap take? Answers may include:

- ✦ Deploying e-government and civic applications.
- ✦ Holding digital training classes for small business owners.
- ✦ Upgrading computers in classrooms or community centers.
- ✦ Collectively negotiating with a commercial service provider to provide discounted broadband rates, offer greater capacity and/or coverage, or build a wireless or fiber network.

The following case studies demonstrate how the Nez Perce Tribe in Idaho and rural Midwest communities, assisted by the University of Wisconsin-Extension, conducted broadband inventories, identified where gaps existed and used these results to create Community Broadband Roadmaps responding to local needs.

COMMUNITY PLANNING SPOTLIGHT: NEZ PERCE TRIBE, IDAHO

Purpose: *Expand a wireless microwave network to bring high-speed, affordable broadband services to unserved areas in four northern Idaho counties*

Planning Strategy: *Work with a regional economic development organization to assess the communication needs of tribal residents and businesses and determine how the network should fill gaps*

The Nez Perce Tribe had delivered telecommunications services to select community anchor institutions on its tribal territory since 2008. However, the microwave transmission capacity of the commercial carriers that the tribe used was so strained that it could not accommodate another telephone line. Commercial telecom operators did not want to expand their networks to cover areas with a population density of less than six people per square mile.

The Nez Perce Tribe participated in a seven-county economic development summit that concluded that higher-speed broadband was necessary to spur regional development. The tribe then inventoried the facilities in the region and conducted a community assessment to find out what people needed.

In 2008, the tribe received a planning grant to assess the feasibility of building a wireless broadband network to upgrade broadband service to schools, libraries, healthcare facilities, public safety entities, and tribal homes by linking to a regional fiber network. At this stage, the planning team carried out a more detailed community assessment with schools, hospitals, and public safety officials to aggregate demand for the proposed network.

This process enabled the tribe to pinpoint where service gaps existed and new wireless capacity would help. Discussions with stakeholders and additional public forums enabled the tribe to determine how the network would benefit the local workforce and create jobs.

In 2013, the tribe completed its Nez Perce Reservation Broadband Enhancement project (<http://www2.ntia.doc.gov/grantee/nez-perce-tribe>), constructing its own wireless broadband network across its 1,200 square-mile reservation.

“Our advice to others is to build a career path around the broadband network plan. The tribe offers certification for tower climbers, and trains installers who later move into programming. People who become fiber splicers have valuable emergency-repair skills. We are building institutional awareness by developing the expertise.”

— Chris St. Germaine, Department of Technology Services, Nez Perce Tribe

COMMUNITY PLANNING SPOTLIGHT: RURAL WISCONSIN LOCAL GOVERNMENTS

Purpose: *Conduct a broadband adoption program in five communities*

Planning Strategy: *Cultivate broadband “champions” to lead communities in using planning methodology to assess broadband gaps and identify opportunities to begin projects to address local needs*

Four rural Wisconsin communities — Chippewa Valley, Menominee Nation, Platteville and Superior — agreed to initiate broadband adoption projects with the University of Wisconsin-Extension (UWEX) as part of its Building Community Capacity through Broadband (BCCB) initiative (<http://www.uwex.edu/broadband/>). The BCCB initiative also supplied these communities with broadband infrastructure.

The Chippewa Valley Network worked with UWEX to develop a planning framework for community-driven broadband design in which governments and other community institutions that require improved broadband access lead the process. The BCCB project used this framework to involve the additional communities to plan infrastructure extensions and execute broadband adoption projects.

Each community established an advisory panel, selected an outreach coordinator and convened focus groups composed of residents, farmers, businesses, seniors, tribal members and educators. The focus groups revealed the types of broadband access, training and technology support that the communities viewed as most relevant. The project plans reflected the priorities expressed in the focus groups, giving each community the feeling that it truly “owned” the direction of its chosen projects.

For example, town meetings and focus groups in Chippewa Valley showed that the public needed to learn more about the value of broadband. The general lack of computer training and access to necessary tools was apparent. In addition to creating educational materials and informative videos, 35 Chippewa Valley organizations collaborated to create four mobile computer labs for training.

In Platteville, people felt that the business and agricultural communities and seniors had the most to gain from additional broadband facilities and training. Their broadband champions initiated three projects to create a new computer lab at the local senior center, several mobile computer labs for the library and local business incubator and a program to teach farmers and migrant workers how to use laptops on site.

In Superior, broadband champions reached out to the Menominee Nation and four other partners to develop mobile computer labs and creative programs to educate the community about broadband, build training facilities at public computer centers and offer training via mobile labs.

The leaders of these five demonstration BCCB initiatives held bi-weekly teleconferences to share strategies, lessons and progress reports. With these lessons learned, UWEX formally launched its Broadband & E-Commerce Education Center, began broadband “boot camps” for community partners and created a Digital Leader grant program (<http://broadband.uwex.edu/resources/digital-leader-grant-program/>) to carry on its work.

Video:

@ UWEX’s YouTube channel shows how broadband is helping economic and community development, telemedicine, business, education, and government: <https://www.youtube.com/channel/UCTq7ZthqsOMX8mbLoispMFg>

“The initiative has to be owned by the local groups. They might not be ‘broadband champions’ yet, but we are educating them about the broadband needs of their community. We created a digital leadership program, and offered a small stipend to create a program that can address their local needs.

“They had ‘listening’ sessions and out of that, they developed a vision of what they wanted in their community, and how broadband could help them flourish, thrive and — in some areas — survive.”

— Maria Alvarez Stroud, University of Wisconsin-Extension

STEP 3: ENGAGE STAKEHOLDERS

STEP 1

Assemble a Team to Develop a Community Broadband Vision

STEP 2

Assess Broadband Resources, Gaps and Needs

STEP 3 Engage Stakeholders

STEP 4

Evaluate Technology Options

STEP 5

Select an Organizational Model

STEP 6

Create the Project Plan

This next step expands support for the Community Broadband Roadmap by moving beyond the small planning team to discuss ideas and perform research in a wider public arena. In this phase, broadband champions call together larger groups of stakeholders, share the strategic vision and goals, discuss findings from the broadband assessment, lay out the case for one or more broadband projects and gather community feedback.

The goal here is to strengthen relationships, seek areas of agreement and pull a wider scope of constituents into a common vision of the future. This step lays the foundation to develop more detailed plans about technology, partners and financing.

Expanding broadband networks, gaining access to higher broadband speeds and boosting digital literacy does not “just happen” — it takes a concerted effort. The champion(s) and the planning team must make the case for action by explicitly pointing out the benefits of broadband to the community.

Tribal and local governments that have successfully engaged the public around broadband projects and plans offer this advice:

- ✦ **Host many discussion groups:** Broadband champions and teams can engage all sectors of the community by hosting, attending and presenting at public meetings and other neighborhood, business and educator forums. They should involve leaders of community institutions, schools, hospitals and the Chamber of Commerce and talk to a wide range of stakeholders to hear fresh, new perspectives on how broadband might benefit the community.
- ✦ **Put the roadmap into a community context:** Advocates should address how the roadmap will improve healthcare, strengthen civic participation, improve education and fortify the economy and workforce development. Constituents should understand that “broadband” is a means to solve problems and reach goals — not just a technology service.

“Get the community involved right from the beginning and keep asking patrons what access, technology, and training they need.”

— Ron Jurgens, Director of Institutional Planning, College of Menominee Nation

- ✦ **Discuss technical aspects thoughtfully and clearly:** Planners should provide clear definitions of the word “broadband” and the technical terms associated with the projects being discussed so that everyone is on the same page. Jargon should be avoided at all public presentations.
- ✦ **Build momentum by listening and earning trust:** Planners must solicit input from leaders on what the community needs, keep them informed on the planning activities and brief them on the results. All questions and concerns should be addressed up-front.
- ✦ **Keep reaching out to stakeholders:** The broadband planning team should continue to seek feedback to refine the purposes and objectives of the plan and strengthen the stakeholder commitment.
- ✦ **Use what you learn to lay the groundwork for partnerships:** By speaking with stakeholders, other ideas on collaboration are likely to emerge. Stakeholders who want to be involved in the implementation should be engaged and planners should create a “map” of connections to identify partnership opportunities.

At this stage of the planning process, stakeholder input will help the planning team decide on the type of project the community wants to pursue. The planning team will then need to determine the proposed project’s technology, organizational structure, financial model and implementation plans.

Tools and Resources

- ✓ The Planning Tool on page 30 contains a checklist for training and community outreach.

The case study below describes how the Vermont Council on Rural Development engaged stakeholders in many communities, created plans that addressed their needs and connected them with the right resources to make their high-priority projects a reality.

COMMUNITY PLANNING SPOTLIGHT: RURAL VERMONT COMMUNITIES

Purpose: : Increase broadband access and adoption in 24 small, rural communities by providing broadband access and training, raising awareness and planning projects

Planning Strategy: Help stakeholders plan and implement broadband adoption projects

The Vermont Council on Rural Development (VCRD) (<http://www.vtrural.org/programs/digital-economy>), a state rural development organization and BTOP recipient, had long advocated universal broadband service and used its expertise to initiate strategic plans in rural areas and towns. VCRD community directors held public meetings to identify where digital literacy training and broadband access were needed. They found pockets of households lacking any broadband access, including home-based businesses, low-income households, isolated seniors and students required to take on-line classes. People expressed strong interest in broadband access via Wi-Fi in town centers.

Local meetings identified the stakeholders who would benefit most from working with the project's partner organizations:

- ✦ **Small home businesses:** The Small Business Development Center provided consultations, trainings and workshops: <http://www.vtsbdc.org/>
- ✦ **Elementary schools:** Digital Wish, which is dedicated to one-on-one computer-based education, provided trainers and equipment: <http://www.digitalwish.com/dw/digitalwish/home>
- ✦ **Town governments:** The Snelling Center for Government provided consultations and guidance in building municipal websites: <http://evermontbroadband.org/>
- ✦ **Public libraries:** The Vermont Department of Libraries developed public broadband initiatives and planned for technology purchases: http://libraries.vermont.gov/services/projects/digital_literacy

VCRD initiated the Vermont Community Broadband project (e-Vermont) to train more than 1,800 individuals and distribute 1,200 computers to 4th and 5th grade students in 24 communities. The project provided much-needed computer access, software and broadband access in area libraries. The local cable operator provided broadband to 30 anchor institutions in ten communities. The project helped small businesses get online and trained local governments and organizations in new online applications.

When its project concluded, e-Vermont put its wisdom into an online toolkit for community leaders to identify local goals which could be served by online tools.

Resources:

- @ The e-Vermont website offers toolkits, lists of projects and success stories: <http://vtrural.org/programs/e-vermont>
- @ The e-Government Help Center for Vermont towns, co-sponsored by the Snelling Center for Government offers municipal website templates, best practices and policies for municipal sites: <http://evermontbroadband.org/>
- @ The e-Vermont site offers toolkits to set up Wi-Fi hotspots and Wi-Fi zones: <http://vtrural.org/programs/e-vermont/toolkit/public-internet-access/>



How to: Use Your Assessment Data to Make a Case to Stakeholders

- ✦ Provide a rationale for conducting the study and broadband plan
- ✦ Present key findings of the residential, business and institutional assessments
- ✦ Identify the strengths and weaknesses of available broadband service in the area
- ✦ Explain how to leverage opportunities and address challenges
- ✦ Set goals and action items in the short- and long-term
- ✦ Timelines and benchmarks against which progress will be measured

STEP 4: EVALUATE TECHNOLOGY AND SERVICE OPTIONS

STEP 1

Assemble a Team to Develop a Community Broadband Vision

STEP 2

Assess Broadband Resources, Gaps and Needs

STEP 3

Engage Stakeholders

STEP 4

Evaluate Technology Options

STEP 5

Select an Organizational Model

STEP 6

Create the Project Plan

This is the point in the process where the discussion turns to the pros and cons of various technology and service options — after the planning team has completed its assessments of the needs of the constituents, what technology is available locally and what resource “gaps” exist.

What needs to happen and what will drive technology and service decisions? The “right” technology and/or service to boost broadband adoption, expand public access to broadband and deliver a fast broadband connection varies depending on the community. The data collected during the earlier planning phase is used to determine technology and service needs.

In the planning phase, teams should ask questions and thoroughly vet the technology and service options that fit their priority mission(s).

The planning team should ask the following questions, according to the type of broadband project under consideration:

- ✦ **Broadband adoption projects:** Is a current Internet service provider willing to offer discounted broadband subscriptions to low-income households or schools? If not, what options can be pursued? Are institutions or funding sources willing to provide free or low-cost computers or other devices? What types of devices are most appropriate for the populations served (*e.g.*, laptops for high-school students or tablets for seniors)?
 - ✦ **Public computer centers:** Which mix of equipment is best for the public computer centers — desktop computers, tablets, laptops and /or other mobile devices? What assistive technology will be provided for people with disabilities? How will systems and network administration be handled? How much bandwidth is required? What broadband services are available to the public computer center? Does the available technology and services meet the identified needs? How will usage and performance metrics be gathered? What level of security is appropriate?
 - ✦ **Broadband access:** Are new infrastructure or services needed to meet community needs and save costs? Should a local government, hospital or college campus buy additional broadband capacity or services in the commercial market? If commercial rates are too expensive, can multiple users form a coalition to negotiate a better price? Should local or tribal governments build or expand their own networks to serve these institutions? Did a BTOP recipient or a private provider already build a fiber network nearby that could be leveraged?
- Many capital-intensive infrastructure projects, such as extensions to fiber networks, require an additional planning component at this stage: developing a network strategy that begins to answer the following types of questions:
- ✦ How much telecommunications capacity will local households, institutions, businesses, public safety users and the government require in the future? What new types of services and applications will the network need to support?
 - ✦ What is the best architecture and footprint to serve the targeted sites?
 - ✦ How much network redundancy is required? What are the security requirements?
 - ✦ Would a wireless network with high-capacity backbone architecture meet community needs better than laying fiber?
 - ✦ Would it be less expensive to lay fiber by using existing conduit?
 - ✦ Considering potential demand as well as taking into account initial costs, operations and long-term cost savings, what is the most cost-effective solution over the long-term?
 - ✦ If the initial network design is too expensive, are there ways to lower the cost? Are project partners willing to contribute assets to the project?

“We first envisioned classroom-based training at a PCC training center. Early on in our planning, we considered how to equip the Center and planned for 140 desktop computers and a small number of laptops. Later, we realized there was a sea change going on with consumers and mobile technology. We focused our community training plans away from classrooms and more on small groups...even one-on-one.”

— Ron Jurgens, Director of Institutional Planning, College of Menominee Nation

Planners need to be flexible in considering the best solutions for technology and services and keep listening to the community, since plans may be influenced by changes in technology, users and their behaviors. Local planning teams can learn more about technology and service options by speaking directly with broadband providers, equipment suppliers and other communities about what technology and services they chose and what factors were important.

Resources

- ✓ BroadbandUSA's future publication, *Implementing the Community's Broadband Network Vision* is a toolkit that provides best practices of local and tribal governments to encourage private broadband providers to expand all networks.

STEP 5: SELECT AN ORGANIZATIONAL MODEL

STEP 1

Assemble a Team to Develop a Community Broadband Vision

STEP 2

Assess Broadband Resources, Gaps and Needs

STEP 3

Engage Stakeholders

STEP 4

Evaluate Technology Options

STEP 5

Select an Organizational Model

STEP 6

Create the Project Plan

Innovative frameworks for organizational structures abound. The next step in the planning process is to choose an organizational model that provides the best legal and financial framework to implement and maintain a community project or infrastructure plan. Note that some entities refer to this as their “business model” or “partnership model.”

Planning the project’s organizational model is driven by:

- ✦ The ways in which the project creates public benefits.
- ✦ The most advantageous legal relationship that the partners can create for the plan.
- ✦ How the broadband activity will be funded.

Day-to-day operations and financial flows should be considered at this stage:

- ✦ Who will build and operate the network or project?
- ✦ Who is fiscally responsible for this network or project?
- ✦ Who receives grant money or other funds and manages the budget?
- ✦ How can the financial goal of self-sustainability be met?
- ✦ What state and federal policy decisions might impact planning (*e.g.*, changes in E-Rate or Universal Service Fund)?

Broadband Adoption and Public Computer Center Projects

One of the following types of organizations typically operates broadband adoption projects and public computer centers:

- ✦ Local or tribal government technology or social service departments.
- ✦ Libraries, schools, workforce and recreation centers, and public housing authorities.
- ✦ Non-profit organizations, such as youth centers and community-based organizations.
- ✦ Universities and community or tribal colleges.

- ✦ Public-private partnerships (*e.g.*, with broadband providers, device vendors or companies requiring specific skill sets).

Local or tribal governments may operate their own public computer centers and digital training programs and fund these activities directly through department budgets. In other cases, the government may provide grants to local non-profits to operate these programs. Some projects may require the creation of partnerships with local foundations, private companies or non-profits if the long-term operation and sustainability relies on fundraising from private sources and philanthropy.

The following questions are examples to prompt thinking on partnership opportunities:

- ✦ Is a local non-profit already offering computer training as part of its workforce development program?
- ✦ Do broadband providers offer discounts to low-income K-12 students or families?
- ✦ Does a community college have instructors or interns who could provide training and technical support?
- ✦ Can community benefits in cable franchise agreements or telecommunications contracts be used to fund training programs or provide broadband to public computer centers?

Selecting the best organizational model and partnership structure depends upon the resources and needs of the community. A local community foundation may have more flexibility to raise and disburse grant funds. A non-profit may have a more efficient process to procure computers. A state or national program may have specialized training and curriculum. A community organization may already have strong outreach to specific groups, such as immigrant populations or disadvantaged youth. The government IT department may have personnel to deploy equipment and/or provide technical support at public computer centers.

Broadband Infrastructure Projects

Local and tribal governments will find that infrastructure projects need partners — often from the private sector. In many cases, for example, a local government, tribal government or an anchor institution enters into a long-term lease with a commercial service provider for high-speed broadband service, products or dark fiber.

There are still areas of the country, however, which lack sufficient broadband infrastructure to meet the needs of their communities. In these cases, governments may take action to entice a private telecommunications company to enhance service, secure the additional capacity through partnerships or build a network themselves. For capital-intensive broadband infrastructure projects, local and tribal governments have many ownership/organizational models to consider:

- ✦ Public-private partnerships for construction, capacity, service and operation.
- ✦ Private sector ownership of a network serving community anchor institutions.
- ✦ Research and education (R&E) networks which are expanding to serve additional institutions.
- ✦ State networks whose business model is based on contractual agreements, direct network ownership or public-private partnerships.
- ✦ Direct local or tribal government ownership.
- ✦ Municipal utility ownership.
- ✦ Ownership by a consortium, such as a rural electric cooperative or group of local telephone companies.
- ✦ Non-profit ownership.
- ✦ Ownership by an economic development entity.
- ✦ Ownership by an educational institution, such as a university, community or tribal college.
- ✦ Public sector partnerships.

Public-private partnerships are common, and local governments have a variety of resources to bring to the table. The following list includes assets which tribal and local governments have used to promote private investment and partnerships in capital-intensive broadband infrastructure projects:

- ✦ Selling or leasing excess fiber or cable strands.
- ✦ Adding additional fiber when constructing a government-owned fiber network or building conduit.
- ✦ Selling or leasing space on towers, light poles, water towers or buildings to microwave and wireless providers.
- ✦ Selling or leasing secure, accessible space or real estate for network operating centers (NOCs), hub and cabinet locations.
- ✦ Providing rights-of-way (ROW) to a telecommunications network operator in exchange for telecommunications capacity or fiber on their network.
- ✦ Obtaining capacity, equipment, colocation, services or fiber from a telecommunications network operator for local government and/or institutional use in exchange for waivers of franchise or other fees.
- ✦ Selling or leasing excess capacity of conduit. For example, local governments can include conduit with other planned capital improvements in the rights-of-way, or when using Federal Highway Administration funds for smart highway deployments.
- ✦ Easing permitting and rights-of-way.

The examples below illustrate considerations for the organizational models used by Nelson County's middle-mile fiber-optic network in rural Virginia and the City of Chicago's large-scale broadband adoption program.

Tools and Resources

- ✓ The Planning Tool on page 31 contains options to consider for broadband ownership models and financing.

COMMUNITY PLANNING SPOTLIGHT: NELSON COUNTY, VIRGINIA

Purpose: *Enhance and expand broadband in a rural county by building a fiber network augmented by microwave to connect community anchor institutions*

Planning Strategy: *Create an organizational model for a county-owned broadband network*

Nelson County, Virginia initiated the Nelson County Virginia Broadband Project to build a 31-mile middle-mile fiber network and construct four towers for wireless service through the central part of Nelson County, to spur economic development and bring high-speed broadband to county residents in this rural area of the Blue Ridge Mountains.

After Nelson County’s board of supervisors incorporated enhanced broadband into its 2004 economic development plan, the job of making it happen fell to the county administrator, finance director, economic development director, information systems director and their small staffs. To provide feedback to the Nelson County planning team, the board established a citizen-based broadband steering committee that included tech-savvy representatives from the local K-12 schools and other community anchor institutions.

Obtaining state planning support was critical in the first planning phase. A community block grant from the Virginia Department of Housing and Community Development (VDHCD) provided support for the team to carry out a community-needs assessment, which helped formulate its preliminary plan and funding strategy. A second planning grant in 2007 allowed the team to hire an engineering consultant to offer guidance, develop the detailed network and implementation plan and advise on the funding strategy to build a fiber network.

Although it owns the completed network, Nelson County is not legally permitted either to operate it or provide services. The Board of Supervisors solved this problem by creating a separate operating entity, the Nelson County Broadband Authority (NCBA) and recruiting service providers. Because Nelson County did not have sufficient staff or technical expertise within its small IT department, it has outsourced day-to-day operations and maintenance to a network operator located in nearby Charlottesville.

The Nelson County staff, which reports to the Board and NCBA, remains in charge of overseeing the project’s business plan, recommending pricing adjustments and network extensions and exploring business opportunities with commercial service providers (e.g., leasing fiber capacity between cell towers).

County plan:

@ Nelson County’s Broadband Project overview is available here: <http://www.nelsoncounty-va.gov/government/board-of-supervisors/broadband-project/>

“Early on, figure out who your users will be and how much is feasible to charge them to use your network.

“Spend lots of time getting your rate structure right, and early on identify who will be using your network to provide service.”

— The Nelson County Broadband Planning Team

COMMUNITY PLANNING SPOTLIGHT: CITY OF CHICAGO

Purpose: *Spur economic development and increase civic engagement with comprehensive broadband adoption and digital training programs*

Planning Strategy: *Create an organizational model that leverages strong partnerships across sectors to expand broadband adoption initiatives and sustain long-term funding*

The City of Chicago offers an example of how a large city with low broadband adoption rates in certain neighborhoods organized a large-scale adoption effort involving multiple operational and funding partners within an even larger city-led economic development initiative. By involving these partners, Chicago enabled an iterative planning and implementation model that allowed numerous broadband adoption and digital inclusion initiatives to scale across Chicago without losing sight of neighborhood identities. (See Chicago’s planning timeline in the Appendix on page 28.)

The digital inclusion initial planning process kicked off in 2008. Led by Chicago’s Department of Innovation and Technology (DoIT), Chicago engaged community, foundation and private sector partners; conducted community broadband assessments with university research teams; identified neighborhoods with low broadband adoption rates; and developed funding plans for projects in these neighborhoods.

In 2010, Chicago launched the Smart Communities initiative an innovative partnership with the Chicago Community Trust, a local community foundation; the John D. and Catherine T. MacArthur Foundation; and Local Initiatives Support Corporation (LISC), a community development organization. The partnership was spun off as a separate non-profit Smart Chicago Collaborative, which continues to administer the Chicago’s digital inclusion and civic technology initiatives.

The partner organizations had more flexibility to accept, distribute and raise funds than the City of Chicago, therefore they served as the conduits to the community organizations in the selected neighborhoods for government and private funding.

These grass-roots community organizations served as front-line implementation teams for the local broadband adoption projects given their close ties to residents, churches, businesses and schools in the targeted neighborhoods. The community organizations trained and deployed local residents as “Tech Organizers” who served as neighborhood computer trainers and broadband advocates. The project evaluation showed that the targeted neighborhoods had a nine percent increase in adoption rates over demographically similar Chicago neighborhoods.

Technology Plan and Evaluation Report:

@ The City of Chicago Technology Plan is available here: <http://techplan.cityofchicago.org/>

@ The Smart Communities Evaluation report is available here: <https://copp-community.asu.edu/content/smart-communities-evaluation>

Additional Resources:

@ The Smart Chicago website provides an overview of current activities sponsored by this civic organization: <http://www.smartchicago.org>

@ The City’s Connect Chicago portal helps residents locate free or low-cost training, services and computers: <http://weconnectchicago.org/>

@ LISC has archived its past work on the Smart Communities portal: <http://www.smartcommunitieschicago.org/index.html>

“BTOP funding seeded a unique approach to civic innovation in Chicago. Tech Organizers trained residents and businesses to use digital tools to organize and advocate on behalf of their communities. Meanwhile, a community of technologists interested in building useful civic tools began to grow.

“Tech Organizers formed critical links between the communities they served and these technologists—translating community needs into simple civic apps and helping individuals use those tools.”

— Brenna Berman, Department of Innovation and Technology (DoIT) Commissioner and CIO, City of Chicago

STEP 6: CREATE THE PROJECT PLAN

STEP 1

Assemble a Team to Develop a Community Broadband Vision

STEP 2

Assess Broadband Resources, Gaps and Needs

STEP 3

Engage Stakeholders

STEP 4

Evaluate Technology Options

STEP 5

Select an Organizational Model

STEP 6

Create the Project Plan

At this point, the planning team will have identified the technologies for the project, primary partners, organizational structures and financing plans. Now it is important to document how to finance and implement the specific projects. Entities refer to this plan as their “project plan,” “business plan” or “implementation plan.”

Tribal and local governments need to determine:

- ✦ Whether their plans can leverage existing projects or facilities.
- ✦ How they plan to implement and operate the projects.
- ✦ How they plan to finance the project and how to make financing sustainable.

The scale and scope of the project plans, which include operational and financial models, may differ significantly depending on the types of projects and communities involved. Since circumstances change, the information in these documents will need to be continually updated.

Broadband Adoption and Public Computer Projects

Broadband adoption projects and public computer centers are generally run by local governments, libraries, schools and non-profit organizations and funded through government budgets and public or foundation grants.

Plans for broadband adoption projects should contain descriptions of:

- ✦ The broadband services currently available, including prices.
- ✦ Adoption goals for new home subscribers, business subscribers and other relevant indicators.
- ✦ Targeted populations (*i.e.*, low-income families, disabled, seniors, minority-owned businesses).
- ✦ The types of education, equipment and training the project will provide.
- ✦ How existing community resources will be used for the project, if applicable.

- ✦ Methods for measuring increases in new broadband subscribers and users including metrics, as well as how this data can be aggregated and detailed.
- ✦ How the project will increase broadband use and adoption.
- ✦ Demonstrable benefits to the community and institutional partners.

Plans for public computer center projects should contain descriptions of:

- ✦ The types of education, equipment and training that the project will provide.
- ✦ The required training and technical staff and the types of training/skills that staff will need.
- ✦ How the offered programs and training will appeal to the targeted groups.
- ✦ The outreach plan to engage the targeted groups and bring them into the centers.
- ✦ How potential barriers to attendance (*e.g.*, lack of transportation, childcare, accessible technology for people with disabilities, English language proficiency, trust in the institutions) will be addressed.
- ✦ Broadband capacity, technical equipment and resources that will support the center.
- ✦ Schedule and plans for upgrades.
- ✦ Benefits to the host organizations and how the computer centers complement the existing programs.
- ✦ Planned expenses such as staff, space rental, equipment purchases and maintenance, insurance and broadband service.
- ✦ How usage metrics will be gathered.
- ✦ Amount requested from agency budgets or grants.
- ✦ Expected income from operations (if any).
- ✦ In-kind donations and contributions.

Broadband Infrastructure Projects

Project plans for infrastructure projects should contain:

- ✦ A strong justification describing why the project is needed (*i.e.*, that the area is not served with broadband infrastructure, local institutions need higher capacity).
- ✦ An explanation of who the project will serve, with solid subscriber or network-user forecasts based on market surveys and clear, detailed methodologies.
- ✦ A description of how the project will provide wholesale and/or retail services, products and capacity, if applicable.
- ✦ An overview of planned interconnection at points of presence (POPs) with community institutions, other providers and regional and national networks.
- ✦ An explanation of why costs per mile (or per institution, business or household) are reasonable.
- ✦ A description of organizational and partner capabilities and roles.
- ✦ Existing network or other assets that the project will leverage through leasing, contracts or other arrangements.
- ✦ An analysis of the economic return of the network deployment including forecasts for expenses and income, the combined revenue estimates for all partners, potential cost savings and/or other financial factors.

In addition, the plans for infrastructure projects should include implementation and financial details. The necessary information depends on whether the tribal or local government is encouraging local providers to expand services, using services from existing providers or constructing and/or operating a new network.

The details of the plan also depend on who will benefit from the project, for example — residences, local or tribal government sites, public safety, community anchor institutions, businesses and economic development districts and third parties purchasing wholesale services.

For projects designed to encourage broadband deployment by existing broadband providers, the plan should include:

1. Descriptions of activities to streamline the rights-of-way approval processes.

2. Examples of agreements required for the build, such as right-of-way access, land use and building entry.
3. A map of government assets that providers could use (*e.g.*, water towers).
4. Relevant ordinances (*e.g.*, dig-once policy).
5. A timetable to construct any new government assets (*e.g.*, conduit, fiber).

Financial models are more complex for infrastructure construction projects or projects in which a tribe or local government operates a network using capacity from a broadband provider. For projects that primarily leverage an existing broadband provider's services or capacity, the plan should specify:

1. A list of locations and the services and/or capacity that each site needs.
2. The process to develop a request for proposal (RFP), establish a review committee and make final selection decisions.
3. Reliability standards and a statement of how the service provider will respond to problems.
4. Plans to acquire necessary equipment and/or resources, as well as any technical changes and training.

For projects in which the tribal or local government will construct or operate a network, the plan should also include:

- ✦ An assessment of legislative or regulatory authority or restrictions on the local government's operation and/or ownership of a broadband network.
- ✦ Timetable for related RFP processes and activities (see above).
- ✦ Steps related to designing the infrastructure and obtaining the necessary approvals (*e.g.*, rights-of-way, licenses).
- ✦ Construction, technical testing, equipment installation and service deployment timetables.
- ✦ Back office, network operations and maintenance needs.
- ✦ Marketing and outreach plans.

For these types of projects, the plan should include pro forma forecast models. These financial projections are similar to those prepared by commercial broadband providers when assessing whether to expand their networks. This information will need to be continually updated throughout the project.

Pro forma forecast models have three discrete components, similar to those for a commercial business:

- ✦ **Income statement (P&L):** This measures the net profitability (revenues less expenses) for a period of time, providing a benchmark for key operating margin metrics, such as operating income and profit and loss measures. The income statement and the capital expense forecast will drive development of all other pro forma forecasts.
- ✦ **Balance sheet:** This displays the overall financial balances — assets, liabilities and owner equity — at a single point in time. It helps explain the financing of project assets.
- ✦ **Cash flow statement:** This shows the cash flowing in and out of the business across operating, investing and financing activities.

Definition: Pro Forma

A pro forma financial statement is a collection of financial statements that are based on certain assumptions and projections. An organization prepares pro forma financial statements in an effort to provide a “big picture” view of its overall financial situation.

Generally, the prepared statements include projected balance sheet, income statement and cash-flow statement; collectively, these projected financial statements are referred to as “pro formas.” Pro formas do not follow Generally Accepted Accounting Principles (GAAP) and there are no guidelines for the assumptions used in pro forma statements and projections; therefore, organizations must define the assumptions they use in preparing these statements and provide the assumptions as part of the pro forma package.

Tools and Resources

- ✓ The Planning Tool on page 32 provides the framework for broadband infrastructure financial pro formas.

BROADBAND PLANNING IN CONTEXT

Local and tribal government community broadband roadmaps should have a large, comprehensive vision of what it takes to reap the economic and social benefits of broadband expansion. Every community will have different needs, resources, technology, service, financing and partnership options, so each will answer the following questions differently:

- ✦ How do broadband initiatives support the community, community institutions and businesses?
- ✦ How do infrastructure plans and workforce development projects benefit other economic development activity?
- ✦ What mix of initiatives is best?
- ✦ Which initiatives and benefits can be achieved in the short-term versus over the long-term?

Assembling a team to conduct the broadband planning process (Step 1) is critical to setting the groundwork to embark upon a successful planning process that results in an appropriate broadband roadmap for the community. In analyzing the results of the local resource inventory and needs assessment (Step 2), local governments should focus on the objective, ask what needs to be done and evaluate why it needs to be done. Discussing preliminary conclusions with stakeholders (Step 3) is an important step toward weighing the technology and service options (Step 4) and making the choices that drive the structure (Step 5) and the financial and operational project plan (Step 6). The goal for tribal and local governments is to develop a realistic and actionable broadband roadmap, which may cover one project or many and may include on-going planning efforts that focus on leveraging broadband project outcomes.

This initial planning cycle requires significant effort, but similar evaluation, analysis and reevaluation will be required throughout the lifetime of the broadband project or projects to keep community members engaged, achieve community goals, increase broadband utilization and ensure continued participation by large institutions and/or businesses. Broadband project plans must be updated on a regular basis to maintain the continuous cycle of planning, evaluation and improvement that is critical to sustain any community broadband initiative.

Resources:

- ✦ The planning timelines for North Georgia Network and the City of Chicago in the Appendix illustrate the phases of broadband planning typically undertaken by rural and urban governments.
- ✦ BroadbandUSA's *Strategizing for Broadband Network Sustainability* is a toolkit publication that includes detailed recommendations on continued customer analysis and strategic business plan evolution.

RESOURCES FOR BROADBAND PLANNING

Overall Planning Approach

- ✦ NTIA's Broadband Adoption Toolkit shares best practices from participants in BTOP's digital literacy and broadband adoption programs: http://www2.ntia.doc.gov/files/toolkit_042913.pdf
- ✦ Several states have developed regional broadband planning toolkits, such as the guide published by the State of Utah Governor's Office of Economic Development: <http://broadband.utah.gov/resources/regional-planning/>

Resource Assessment

- ✦ The National Broadband Map is an essential tool to see where broadband networks currently reach, right down to neighborhoods: <http://www.broadbandmap.gov/>
- ✦ The Connecting America's Communities map shows where BTOP investment has upgraded broadband infrastructure, linked institutions, established public computer centers and spurred broadband adoption. It can be searched by zip code and state: <http://www2.ntia.doc.gov/BTOPmap/>
- ✦ The Blandin Foundation has a one-page decision tree that recommends different planning activities based upon specific community circumstances: http://blandinfoundation.org/_uls/resources/Community_Decision_Tree.pdf
- ✦ University of Wisconsin-Extension Center for Community Technology Solutions has developed a framework, worksheets and methodology to assess the degree to which the human and technology capacity is in place for further broadband adoption — *Community Area Networks: A Framework for Discussion*: <http://broadband.uwex.edu/wp-content/uploads/2011/03/CAN-Guide-FINAL.pdf>

Community Assessment

- ✦ The University of Wisconsin-Extension Broadband Reference Guide is a useful primer to educate community members on the benefits and terminology of broadband: <http://broadband.uwex.edu/wp-content/uploads/2014/07/007.010.2014-Broadband-Reference-Guide.pdf>
- ✦ Recent survey instruments for residential and business users are included in Utah Regional Broadband Planning Council's Toolkit: <http://broadband.utah.gov/resources/regional-planning/>
- ✦ The Intelligent Community Indicators (https://www.intelligentcommunity.org/index.php?src=gendocs&ref=Research_Intelligent_Community_Indicators&category=Research) were used to assess the readiness of Minnesota's Intelligent Rural Communities (MIRC) Program Demonstration Communities to use broadband for economic and social development: http://blandinfoundation.org/_uls/resources/MIRC_ICF_Final_Report--04-08-13.pdf.
- ✦ The City of Chicago *Technology Plan* lists the performance indicators that it will track over time to evaluate the success of each initiative, including resident access to broadband: <http://techplan.cityofchicago.org/measuring-success/>
- ✦ The City of Seattle Technology Access and Adoption report contains resident surveys and focus group questionnaires: <http://www.seattle.gov/tech/reports>, and <http://www.seattle.gov/community-technology/research-and-publications/additional-materials>

Stakeholder Outreach

- ✦ NTIA's publication, *Recipient Toolkit: Stakeholder Outreach and Sustainability*, includes strategies for mapping a network of possible stakeholders and including them in program planning and implementation: http://www2.ntia.doc.gov/files/btop_toolkit_2_122110_final.pdf
- ✦ The University of Wisconsin-Extension makes the case for broadband based on its data collection in this presentation, *Understanding Broadband to Influence Business Growth (Price County, WI)*: http://www.slideshare.net/WI_Broadband

Technology Options

- ✦ The University of Wisconsin-Extension Broadband Reference Guide contains a succinct, up-to-date primer on broadband technologies (pp. 10-25): <http://broadband.uwex.edu/wp-content/uploads/2014/07/007.010.2014-Broadband-Reference-Guide.pdf>
- ✦ The New Mexico Broadband Program has published *Broadband Definitions and Acronyms*: http://www.doit.state.nm.us/broadband/docs/NMBB_BroadbandDefinitionsAbbreviationsAcronyms_April2013.pdf
- ✦ The e-Vermont toolkits include information on setting up Wi-Fi hotspots and Wi-Fi zones: <http://vtrural.org/programs/e-vermont/toolkit/public-internet-access/>
- ✦ BroadbandUSA's *Implementing the Community's Broadband Network Vision* is a toolkit that provides best practices of local and tribal governments to encourage private broadband providers to expand networks and government broadband networks.

Organizational Model and Plan

- ✦ The Blandin Foundation's *Municipal Options for Fiber Deployment* highlights the pros and cons of organizational models and arrangements: http://blandinfoundation.org/_uls/resources/Municipal_Options_Grid.pdf
- ✦ The City of Austin *Digital Inclusion Strategic Plan* outlines the community assets and partnerships the City uses to further digital inclusion: <http://austintexas.gov/page/digital-inclusion-strategic-plan>
- ✦ BroadbandUSA's publication, *Introduction to Effective Public-Private Partnerships*, provides an overview of common broadband partnerships and how communities can develop a successful partnership model: http://www.ntia.doc.gov/files/ntia/publications/ntia_ppp_010515.pdf
- ✦ BroadbandUSA's publication, *Guide to Federal Funding of Broadband Projects*, identifies the federal agencies that offer broadband planning assistance: https://www.ntia.doc.gov/files/ntia/publications/broadband_fed_funding_guide.pdf
- ✦ BroadbandUSA's upcoming *Strategizing for Broadband Network Sustainability*, is a toolkit publication that includes more specific recommendations on continued customer analysis and strategic business plan evolution.

PLANNING TOOLS



Planning Tool: Sample Broadband Planning Timelines

Planning a Community Broadband Roadmap can be a multi-year process. It is useful to see the timeframe that two local governments used to move from planning to implementation.

North Georgia Network Cooperative, a BTOP grant recipient formed by a university and county governments, began an economic development initiative involving counties, universities, healthcare facilities, electric cooperatives, and K-12 schools and a middle-mile fiber network.

Planning Timeline: North Georgia Network Cooperative (NGN)	
2007	<ul style="list-style-type: none"> University of North Georgia and four counties form partnership to spur regional economic development by building a broadband network (regional fiber backbone)
2008	<ul style="list-style-type: none"> Partners receive rural economic development grant from a consultant and Georgia Tech to carry out a broadband feasibility study
2009	<ul style="list-style-type: none"> Two electric cooperatives join and incorporate NGN NGN receives NTIA BTOP funding
2010	<ul style="list-style-type: none"> Establish NGN office
2011	<ul style="list-style-type: none"> Complete 260-mile core fiber ring
2012	<ul style="list-style-type: none"> Five core network point of presence (C-POPs) activated Georgia Communications Cooperative (GCC), a member-owned cooperative services provider, created by NGN
2013	<ul style="list-style-type: none"> Eight school districts, the state, and the University of Northern Georgia begin planning a regional education network Middle-mile extension of fiber network to county business park Fiber network construction expands into additional counties

Planning Tool: Sample Broadband Planning Timelines

Planning a Community Broadband Roadmap can be a multi-year process. It is useful to see the timeframe that two local governments used to move from planning to implementation.

The City of Chicago, a BTOP grant recipient, had many underserved areas in which it wanted to drive broadband adoption as part of its long-term economic development effort. This timeline shows the steps Chicago took to set an agenda, involve multiple partners, target neighborhoods, measure results and embed the broadband agenda into its ongoing planning processes.

Planning Timeline: City of Chicago	
2006	<ul style="list-style-type: none"> ✦ Mayor convenes advisory council on Closing the Digital Divide ✦ Members: the City’s Department of Innovation and Technology (DoIT), Chicago Community Trust, MacArthur Foundation and University of Illinois-Chicago, City officials and private partners ✦ Members are key partners in implementing Chicago’s Digital Inclusion strategy
2007	<ul style="list-style-type: none"> ✦ Advisory council holds hearings and interviews community-based organizations, workforce development groups, universities and top corporate executives ✦ Council issues recommendations in <i>The City that Networks: Transforming Society and Economy Through Digital Excellence</i>: http://www.cityofchicago.org/dam/city/depts/doit/supp_info/DEI/CityThatNetworks.pdf
2008	<ul style="list-style-type: none"> ✦ A study by the City, the MacArthur Foundation and the Illinois Department of Commerce and Economic Opportunity identify Chicago areas with low broadband use: <i>Digital Excellence in Chicago: A Citywide View of Technology Use</i>: http://www.cityofchicago.org/dam/city/depts/doit/supp_info/DEI/Digital_Excellence_Study_2009.pdf ✦ The cities of Chicago, Boston and San Francisco commissioned a study on ways to expand broadband infrastructure and access in large American cities: <i>Municipal Broadband Market Assessment</i>: http://www.cityofchicago.org/dam/city/depts/doit/supp_info/DEI/MunicipalBroadband.pdf ✦ LISC Chicago, a non-profit focused on community and economic development, joins the team as the broadband adoption implementation partner ✦ The Digital inclusion initiative leverages LISC’s community development infrastructure and ties to trusted community organizations in marginalized communities
2009	<ul style="list-style-type: none"> ✦ The City issues its <i>Digital Excellence Action Agenda</i>: http://www.cityofchicago.org/dam/city/depts/doit/supp_info/DEI/Digital_Excellence_Action_Agenda_2009.pdf ✦ Smart Communities implementation plan announced: <i>Smart Communities Master Plan</i>: http://www.lisc-chicago.org/uploads/lisc-chicago/documents/scpmasterplan.pdf ✦ Neighborhoods chosen for in-depth training and outreach efforts, based on broadband adoption rates and economic data ✦ Relationships formed with grass-roots organizations in targeted neighborhoods ✦ Local neighborhood plans developed, for example, plans for Auburn Gresham, Chicago Lawn and Englewood: http://www.cityofchicago.org/content/dam/city/depts/doit/supp_info/DEI/Southwest_Smart_Communities_Plan_Final.pdf
2010	<ul style="list-style-type: none"> ✦ Smart Chicago begun as formal partnership among the City of Chicago, MacArthur Foundation and Chicago Community Trust, which administers the Smart Chicago Trust Fund: http://www.cct.org/impact/partnerships-initiatives/expanding-information-access/smart-chicago ✦ Chicago receives BTOP SBA and PCC grant awards ✦ Digital literacy classes started in five initial targeted neighborhoods ✦ Neighborhood implementation administered by non-profit service organization, LISC ✦ Launched five on-line community web portals
2011	<ul style="list-style-type: none"> ✦ Smart Chicago partnership spins off separate non-profit, the Smart Chicago Collaborative: http://www.smartchicagocollaborative.org ✦ Residents involved in literacy classes ✦ Small and mid-size businesses participate in technology needs assessment ✦ Second round of surveys measure results in neighborhoods
2012	<ul style="list-style-type: none"> ✦ Corporate telecommunications partners provide subsidized broadband packages ✦ Economic development group tasked with bringing businesses to Chicago recommends driving the digital economy to drive economic growth: <i>World Business Chicago Plan for Economic Development and Growth</i>: http://www.worldbusinesschicago.com/plan ✦ Launched Smart Health Centers: http://www.smarthealthcenters.org/
2013	<ul style="list-style-type: none"> ✦ University researchers carry out city-wide technology use assessment ✦ Third round of surveys measure results in neighborhoods ✦ Mayor releases <i>Chicago Technology Plan</i> — a digital roadmap: http://techplan.cityofchicago.org ✦ Plan incorporates digital literacy and broadband adoption goals
2014	<ul style="list-style-type: none"> ✦ The Smart Communities Evaluation Report shows that from 2008-2013 the broadband adoption in Smart Communities rose by an estimated 15 percent while in other Chicago communities it rose by 6 percent

Planning Tool: Planning Checklist

This checklist highlights the planning activities described in this Toolkit— a synopsis of what is involved in expanding broadband adoption, use and infrastructure.

Functional Checklist: Planning a Community Broadband Roadmap

Starting to Plan and Find Partners

- Establish a task force or planning group
- Find colleagues willing to take on leadership roles and do the work
- Create/join local, regional, or state planning and economic development groups
- Identify primary goals and objectives
- Develop a plan with actionable strategies
- Investigate legal issues

Evaluating Resources

- Where are public computer centers?
- Who offers training?
- Assess current broadband speeds
- Map available ICT assets
- Understand upgrade plans from current providers

Reaching Out to the Community and Stakeholders

- Engage public officials
 - What is the potential value to local government?
 - Reach out to residents, local businesses, and institutions
- Conduct needs assessments and surveys
- Estimate demand
- Evaluate how current solutions meet community needs
- Vet business plan with stakeholders to build support
- Speak with representatives of leading institutions and businesses in all sectors about current requirements and future needs

Evaluating Technology and Service Options

- Analyze data from surveys to understand what broadband capacity communities, institutions, and businesses need
 - Broadband speeds
 - Estimate demand and projected increase over time
- Inventory existing technology and services, understand the gaps and develop a program and services plan
- Speak to providers and other communities that have made their own Community Broadband Roadmap

Designing the Organizational/Business Framework

- Determine the legal framework for partners to work together
- Establish lead agency
- Determine financial cash flows

Infrastructure: Creating a Business Model and Plan

- Develop a capital and operating budget
 - Buy/build
 - Purchase/rent
- Analyze funding resources
- Conduct financial feasibility and sensitivity analyses
- Use market research to test assumptions
- Use professional market research to test assumptions for revenue
- Assess operational readiness
- Budget for operational expenditures
- Identify risks to long-term sustainability

Planning Tool: Adoption Training and Community Outreach Planning Checklist

Here are some considerations for planning community adoption training and outreach projects.

Checklist: Training and Community Outreach

Audience

- How to reach intended audience
- Community ambassadors
- Community language requirements
- Hours/access
- Need for Childcare
- ADA compliance and accessibility

Operations

- Staff/training
- Volunteers
- Location(s)
- Security

Network

- Broadband type/speed
- Wi-Fi
- Local area network/devices

Equipment

- Desktop computers
- Laptop computers
- Tablets
- Monitors
- Multiscreen workstations
- Printers
- 3D printers
- Video camera
- Headphones
- Assistive technology

Software

- OS/web browsers
- Software
- Cloud services

Marketing and Outreach

- Direct outreach
- Outreach through partners
- Branding and materials development
- PR and placement

Training and Services

- Free broadband access
- Basic computer/broadband skills
- Student homework assistance
- English as Second Language classes
- Prep: GED, college entry
- Small business development
- Job search, resume prep
- eCommerce and eBay
- Broadband safety and privacy
- Microsoft Office/business apps
- Multimedia (music, video, photos)
- Social media (Facebook, LinkedIn)
- Blogging and web site design
- Assistive software/technology
- Teleconference (Skype)
- Technical certifications
- 3D printing
- eGovernment assistance

Administration

- New or reused equipment
- Application/equipment compatibility
- Maintenance and support
- Managing multiple platforms
- System administration
- Partnership development/management
- Scheduling, tracking
- Evaluation

Planning Tool: Broadband Ownership Models and Financing Options

This summary highlights the ownership models and financing options available for community broadband networks.

Overview: Broadband Ownership Models and Financing Options

Community Broadband Ownership Models: Broadband Adoption and Public Computer Centers

- Local or tribal government IT departments
- Non-profit organizations
- Public-private partnerships
- Libraries
- K-12 schools
- Universities
- Community and tribal colleges

Community Broadband Ownership Models: Infrastructure

- Public-private partnerships on construction, capacity, service and operation
- Private sector ownership of network
- Public led ownership
- Cooperatives
- Research & Education networks
- State network based on IRUs, direct network ownership, or public-private partnerships
- Local/tribal government ownership
- Municipal utility ownership
- Non-profit ownership
- Community and tribal colleges ownership
- Economic development entity ownership

Local Government Financing Options

- Bonds
- Grants
- Loans
- General tax revenue
- Capital contributions by anchor tenants
- Capital leases
- Tax Increment Financing (TIF) or other tax funds
- In-house/in-kind contributions
- Private partners
- Crowdsourcing
- Cash and/or services from partners

Local Government Contributions for Public-Private Partnerships

- Streamline permitting & construction
- Make conduit broadly available under fair/equitable terms
- Make fiber or other telecom assets broadly available with fair/equitable terms
- Sell or lease fiber strands in bundle
- Add fiber to owned network
- Sell or lease space (towers, water towers, buildings) to wireless providers
- Sell or lease secure space for Network Operating Centers (NOCs) or hubs
- Trade ROW to telecom operator in exchange for capacity or fiber
- Waive fees in exchange for capacity, equipment colocation, services or fiber
- Sell or lease excess capacity in conduit

Planning Tool: Infrastructure Financial Pro Forma Income Statement and Expenses (Step Six)

Infrastructure Pro Forma: Income Statement					
Revenues	Forecast Period				
	Year 1	Year 2	Year 3	Year 4	Year 5
<i>Broadband Offerings</i>					
Wholesale Data	\$ -	\$ -	\$ -	\$ -	\$ -
Retail Data	\$ -	\$ -	\$ -	\$ -	\$ -
Dark Fiber	\$ -	\$ -	\$ -	\$ -	\$ -
Collocation	\$ -	\$ -	\$ -	\$ -	\$ -
Other (List Services)	\$ -	\$ -	\$ -	\$ -	\$ -
Other Network Drive Revenues	\$ -	\$ -	\$ -	\$ -	\$ -
Video Services	\$ -	\$ -	\$ -	\$ -	\$ -
Voice Services (local/toll/long distance)	\$ -	\$ -	\$ -	\$ -	\$ -
Other (List Services)	\$ -	\$ -	\$ -	\$ -	\$ -
Universal Service Fund	\$ -	\$ -	\$ -	\$ -	\$ -
Installation Revenues	\$ -	\$ -	\$ -	\$ -	\$ -
Other Revenues	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ -	\$ -	\$ -	\$ -

Expenses	Forecast Period				
	Year 1	Year 2	Year 3	Year 4	Year 5
Backhaul	\$ -	\$ -	\$ -	\$ -	\$ -
Network Maintenance/Monitoring	\$ -	\$ -	\$ -	\$ -	\$ -
Utilities	\$ -	\$ -	\$ -	\$ -	\$ -
Leasing	\$ -	\$ -	\$ -	\$ -	\$ -
Sales/Marketing	\$ -	\$ -	\$ -	\$ -	\$ -
Customer Care	\$ -	\$ -	\$ -	\$ -	\$ -
Billing	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate G&A	\$ -	\$ -	\$ -	\$ -	\$ -
Other Operating Expense	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ -	\$ -	\$ -	\$ -
EBITDA	\$ -	\$ -	\$ -	\$ -	\$ -
Depreciation	\$ -	\$ -	\$ -	\$ -	\$ -
Amortization	\$ -	\$ -	\$ -	\$ -	\$ -
Earnings Before Interest and Taxes	\$ -	\$ -	\$ -	\$ -	\$ -
Interest Expense	\$ -	\$ -	\$ -	\$ -	\$ -
Income Before Taxes	\$ -	\$ -	\$ -	\$ -	\$ -
Property Tax	\$ -	\$ -	\$ -	\$ -	\$ -
Income Taxes	\$ -	\$ -	\$ -	\$ -	\$ -
Net Income	\$ -	\$ -	\$ -	\$ -	\$ -

Planning Tool: Infrastructure Financial Pro Forma Income Statement and Expenses (Step Six)

Infrastructure Pro Forma: Balance Sheet					
Assets	Forecast Period				
	Year 1	Year 2	Year 3	Year 4	Year 5
Current Assets					
Cash	\$ -	\$ -	\$ -	\$ -	\$ -
Marketable Securities	\$ -	\$ -	\$ -	\$ -	\$ -
Accounts Receivable	\$ -	\$ -	\$ -	\$ -	\$ -
Notes Receivable	\$ -	\$ -	\$ -	\$ -	\$ -
Inventory	\$ -	\$ -	\$ -	\$ -	\$ -
Prepayments	\$ -	\$ -	\$ -	\$ -	\$ -
Other Current Assets	\$ -	\$ -	\$ -	\$ -	\$ -
Total Current Assets	\$ -	\$ -	\$ -	\$ -	\$ -
Non-Current Assets					
Long-Term Investments	\$ -	\$ -	\$ -	\$ -	\$ -
Amortizable Asset (Net of Amortization)	\$ -	\$ -	\$ -	\$ -	\$ -
Plant in Service	\$ -	\$ -	\$ -	\$ -	\$ -
Less: Accumulated Depreciation	\$ -	\$ -	\$ -	\$ -	\$ -
Net Plant	\$ -	\$ -	\$ -	\$ -	\$ -
Other	\$ -	\$ -	\$ -	\$ -	\$ -
Total Non-Current Assets	\$ -	\$ -	\$ -	\$ -	\$ -
Total Assets	\$ -	\$ -	\$ -	\$ -	\$ -
Liabilities					
Forecast Period					
	Year 1	Year 2	Year 3	Year 4	Year 5
Current Liabilities					
Accounts Payable	\$ -	\$ -	\$ -	\$ -	\$ -
Notes Payable	\$ -	\$ -	\$ -	\$ -	\$ -
Other Current Liabilities	\$ -	\$ -	\$ -	\$ -	\$ -
Total Current Liabilities	\$ -	\$ -	\$ -	\$ -	\$ -
Long-Term Liabilities					
Long-Term Notes Payable	\$ -	\$ -	\$ -	\$ -	\$ -
Other Long-Term Liabilities	\$ -	\$ -	\$ -	\$ -	\$ -
Total Long-Term Liabilities	\$ -	\$ -	\$ -	\$ -	\$ -
Owners Equity					
Forecast Period					
	Year 1	Year 2	Year 3	Year 4	Year 5
Capital Stock	\$ -	\$ -	\$ -	\$ -	\$ -
Additional Paid-In Capital	\$ -	\$ -	\$ -	\$ -	\$ -
Retained Earnings	\$ -	\$ -	\$ -	\$ -	\$ -
Total Equity	\$ -	\$ -	\$ -	\$ -	\$ -
Total Liabilities and Owner's Equity	\$ -	\$ -	\$ -	\$ -	\$ -

Planning Tool: Infrastructure Financial Pro Forma Income Statement and Expenses (Step Six)

Infrastructure Pro Forma: Statement of Cash Flows					
	Forecast Period				
	Year 1	Year 2	Year 3	Year 4	Year 5
Beginning Cash	\$ -	\$ -	\$ -	\$ -	\$ -
Cash Flows from Operating Activities	\$ -	\$ -	\$ -	\$ -	\$ -
Net Income	\$ -	\$ -	\$ -	\$ -	\$ -
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities	\$ -	\$ -	\$ -	\$ -	\$ -
Add: Depreciation	\$ -	\$ -	\$ -	\$ -	\$ -
Add: Amortization	\$ -	\$ -	\$ -	\$ -	\$ -
Changes in Current Assets and Liabilities	\$ -	\$ -	\$ -	\$ -	\$ -
Marketable Securities	\$ -	\$ -	\$ -	\$ -	\$ -
Accounts Receivable	\$ -	\$ -	\$ -	\$ -	\$ -
Inventory	\$ -	\$ -	\$ -	\$ -	\$ -
Prepayments	\$ -	\$ -	\$ -	\$ -	\$ -
Other Current Assets	\$ -	\$ -	\$ -	\$ -	\$ -
Accounts Payable	\$ -	\$ -	\$ -	\$ -	\$ -
Other Current Liabilities	\$ -	\$ -	\$ -	\$ -	\$ -
Deferred Grant Revenue	\$ -	\$ -	\$ -	\$ -	\$ -
Net Cash Provided (Used) by Operations	\$ -	\$ -	\$ -	\$ -	\$ -

	Forecast Period				
	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Provided by Financing Activities	\$ -	\$ -	\$ -	\$ -	\$ -
Cash Flows from Investing Activities	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Expenditures	\$ -	\$ -	\$ -	\$ -	\$ -
Amortized Asset (Net of Amortization)	\$ -	\$ -	\$ -	\$ -	\$ -
Long-Term Investments	\$ -	\$ -	\$ -	\$ -	\$ -
Net Cash Used by Investing Activities	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Cash	\$ -	\$ -	\$ -	\$ -	\$ -
Ending Cash	\$ -	\$ -	\$ -	\$ -	\$ -

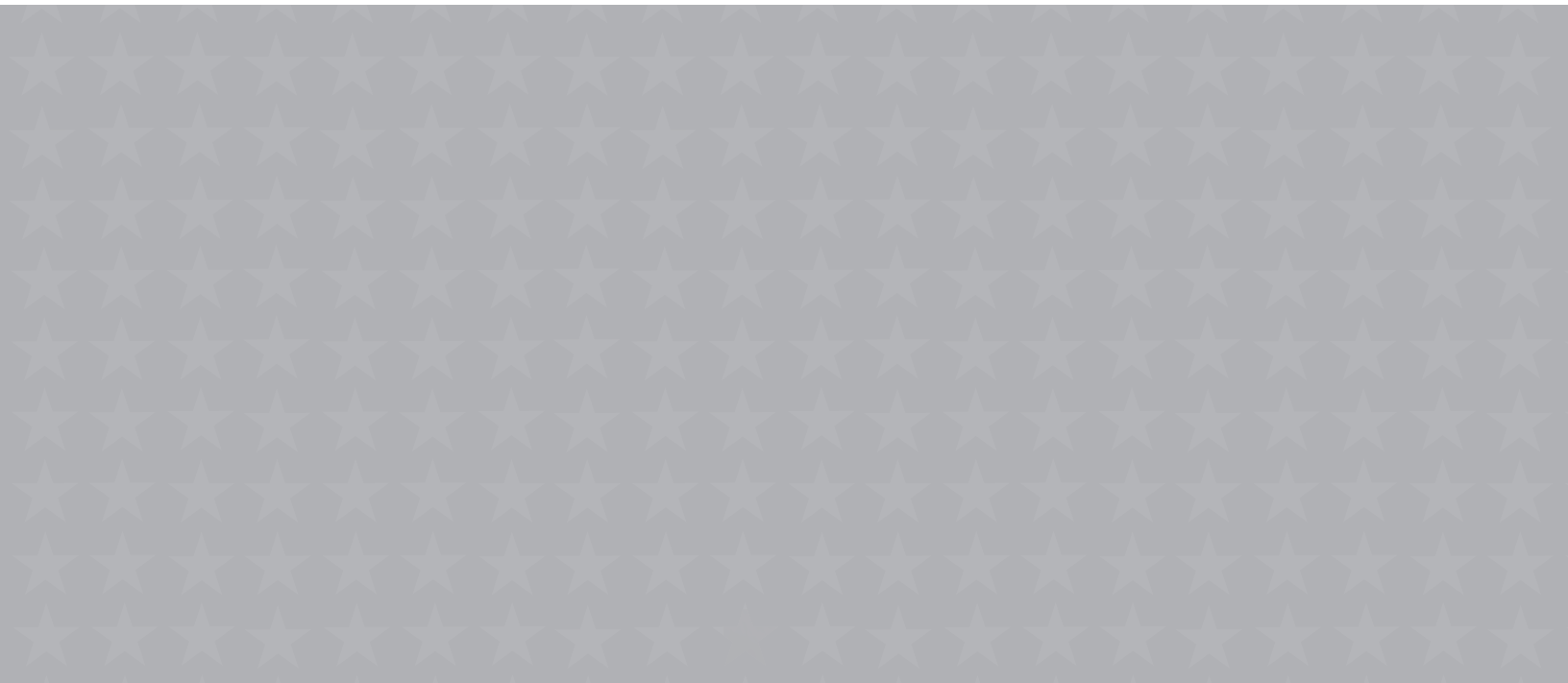
	Forecast Period				
	Year 1	Year 2	Year 3	Year 4	Year 5
Cash Flows from Investing Activities	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Expenditures	\$ -	\$ -	\$ -	\$ -	\$ -
Amortized Asset (Net of Amortization)	\$ -	\$ -	\$ -	\$ -	\$ -
Long-Term Investments	\$ -	\$ -	\$ -	\$ -	\$ -
Net Cash Used by Investing Activities	\$ -	\$ -	\$ -	\$ -	\$ -

CONTACT US

NTIA's BroadbandUSA initiative is dedicated to helping communities achieve their broadband missions. NTIA can offer assistance to communities as they plan for broadband efforts, including stakeholder outreach activities. If you have additional questions about the information contained in this Toolkit, please contact us at broadbandusa@ntia.doc.gov or 202-482-2048.

ABOUT NTIA

The National Telecommunications and Information Administration (NTIA) is the Executive Branch agency principally responsible for advising the President on telecommunications and information policy issues. NTIA's programs and policymaking focus largely on expanding broadband Internet access and adoption in America, expanding the use of spectrum by all users, and ensuring that the Internet remains an engine for continued innovation and economic growth.



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BROADBANDUSA
CONNECTING AMERICA'S COMMUNITIES



Building Digital Communities

Getting Started

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Left: iStockphoto by Dori O’Connell.
Center: Columbus Metropolitan Library’s Job Help Centers provide one-on-one help for job seekers.
Right: A staff member from the Humboldt County, CA Library teaches a member of the public to use an e-book reader. Photo by Josh Jackson, *Eureka Times Standard*.

What is digital inclusion — and why does it matter?

Digital inclusion is the ability of individuals and groups to access and use information and communication technologies. Digital inclusion encompasses not only access to the Internet but also the availability of hardware and software; relevant content and services; and training for the digital literacy skills required for effective use of information and communication technologies. The cost of digital exclusion is great. Without access, full participation in nearly every aspect of American society — from economic success and educational achievement, to positive health outcomes and civic engagement — is compromised.

This guide is designed to help communities attain the vision of digital inclusion.

What does digital inclusion mean for people in a community?

All people, businesses, and institutions will have access to digital content and technologies that enable them to create and support healthy, prosperous, and cohesive 21st century communities.

Specifically, digital inclusion means that:

- All members understand the benefits of advanced information and communication technologies.
- All members have equitable and affordable access to high-speed Internet-connected devices and online content.
- All members can take advantage of the educational, economic, and social opportunities available through these technologies.

Not all members of a community benefit equally, and some communities have been left out altogether. Recognizing the cost to American competitiveness in a global economy, Congress directed the Federal Communications Commission (FCC) to develop a plan to ensure that every American has “access to broadband capability.” Issued in March 2010, the *National Broadband Plan* recommended that the Institute of Museum and Library Services (IMLS) take the lead in supporting libraries and community-based organizations as they improve digital inclusiveness.

This guide was developed with input from over one hundred organizations and individuals with deep knowledge about public access technology and the diverse information needs of communities. It presents a set of overarching principles (and associated goals) and identifies the key characteristics of organizations and communities that foster digital inclusion.

A framework for community-wide planning

Communities across the country are recognizing the pressing need to coordinate, plan for, and implement digital inclusion efforts to ensure that every resident is able to benefit in our increasingly digital society. These efforts include extending broadband infrastructure to rural and other underserved areas, digital literacy, and targeted programs to ensure everyone can complete an online job application, take a distance learning class, or manage his or her healthcare.

The Framework is a resource for community-wide planning to help forward-looking communities achieve digital inclusion for all of their residents. It sets forth a vision of what a modern 21st century community looks like when digital inclusion is a priority, presents a set of principles that need to be addressed in order to achieve that vision, and provides specific goals that can serve as benchmarks for making progress against each of the principle areas. The Framework also includes strategies that communities have implemented around the country to serve as examples for others, acknowledging that every community is unique and will identify its own direction.

The digital inclusion framework is akin to a transportation planning tool. In transportation planning, communities need to move people and goods in order to prosper and grow. A comprehensive transportation plan includes not just the roads, but also the sidewalks, bike lanes, public transportation, traffic control, and enforcement. A transportation plan uses community-established goals and incentives to prioritize the implementation of improvements, and to respond to changing needs. Depending on the specific situation of the community (history, geography, financial base, etc.), these priorities are different, but the basic framework behind all of the plans is substantively similar.

So too is it with digital inclusion. Digital inclusion is a requisite for building healthy and prosperous communities across all important sectors—economic and workforce development, education, health care, public safety and emergency services, civic engagement, and social connections. While each community will have different priorities, the fundamental needs are the same:

- high-speed infrastructure to carry Internet traffic and connect households to businesses and community institutions;
- help people learn to navigate technology and provide a safe environment for doing so;
- maintain public options for those who are unable, can't afford, need temporary access, or for whom it doesn't make sense to maintain private access;
- remove barriers to access for people with disabilities or facing other obstacles to access; and
- address the special needs and requirements of key sectors that drive the local economy.

A community must engage all sectors to achieve digital inclusion—this is not just a function of government action, it needs to involve individuals, local and tribal governing bodies, business, the nonprofit community, special interest groups, and other stakeholders. Public libraries, recognizing the role they have played in bridging the digital divide, are uniquely positioned to convene this planning process and begin this essential work, but the initiative can come from anywhere. What is important is that communities recognize digital inclusion as a priority and take steps to achieve it. *Building Digital Communities* is a planning tool to help communities in this effort.

The Framework provides a resource to help communities chart a course toward improving digital inclusiveness — toward expanding the economic and social opportunities provided by digital technology to all its members. The Framework consists of four components:



Structure of the Framework

Access Principles

Access principles address the infrastructure a community needs to have in place in order to provide opportunities to benefit from digital life.

- **Availability:** A reliable communications infrastructure is the raw material for innovation, growth, and competitive engagement in today's information-based world.
- **Affordability:** Access to the Internet needs to be affordable for communities and their members to benefit from the expanded opportunities of digital life.
- **Design for Inclusion:** People with disabilities, physical or cognitive differences, and differences in age-related capabilities, language, literacy or culture may face challenges using technology and participating in digital life.

Adoption Principles

Adoption principles look to overcome individual barriers that make use of broadband technology less likely, even when access is available.

- **Public Access:** Public access to technology is necessary for community members who have little or no communication technology available in the home, need assistance to effectively use technology, or to supplement connectivity at home or in schools.
- **Relevance:** Beyond having access to technologies, individuals, businesses, and institutions need to understand the relevance and benefits of using technology to achieve educational, economic, and social goals.
- **Digital Literacy:** Digital literacy skills, including the ability to find, evaluate, and use information to achieve goals, are a necessary pathway to digital inclusion.
- **Consumer Safety:** Consumers — both individual and institutional — need accurate, unbiased information on how to safely navigate the digital world.

Strategic Areas

The thoughtful deployment of broadband technologies in six specific strategic areas can strengthen communities and can improve the lives of their residents.

- **Economic and Workforce Development:** Communities need to develop the knowledge and skills of future workers and entrepreneurs, as well as help the current workforce update its competencies to meet the needs of employers.
- **Education:** Educational institutions should ensure that students have the digital skills to reach their full potential by connecting them to a diverse range of electronic resources.
- **Health Care:** Efficiencies and cost-savings in health care delivery, improvement to patient care, and support for independent living and management of health concerns are all enabled by access to broadband and digital technology.
- **Public Safety and Emergency Services:** Residents and first responders need integrated communications systems for emergency and disaster preparation, response, and recovery.
- **Civic Engagement:** Electronic interaction between community institutions, government agencies, and individuals creates enhanced opportunities for active participation in community affairs.
- **Social Connections:** Individual members of a community should have access to technologies that promote social engagement and the pursuit of independent learning and creative interests.

Getting started on digital inclusion

Every community will determine its own path to becoming digitally inclusive, depending on its unique set of needs and priorities, the structure of its government and institutions, and its styles of leadership and civic engagement.

Nevertheless, most communities will be able to use a common set of steps to identify both their needs and the actions required to address those needs. The steps outlined below are processes drawn from a range of efforts to build better communities.

1. Convene stakeholders

Successful strategies to address important community goals are predicated on broad and sustained stakeholder participation, and the list of institutions important to creating a truly inclusive community can be long and diverse:

- **The local city, county, and tribal governments**, as well as those in neighboring areas, will be essential players. Elected leaders and senior appointed officials have specific responsibilities for strategic and community planning across a wide range of areas.
- **Public agencies, especially public libraries**, are essential to the process. Whether they are part of local or district government or independent institutions, public libraries have become the central institutional player in providing public access to digital technologies. Other important public agencies include the public schools (K-12), institutions of higher learning (especially community colleges and adult education programs), museums, economic development agencies, agencies with community centers (such as recreation departments), and public housing departments. In many local governments a central office of technology plays a critical role in digital management issues across the various public agencies and should be actively engaged in the discussion.
- **Non-profit community-based organizations** can be especially effective in reaching hard-to-serve populations, and vary widely from one community to another. Community-based organizations are often more nimble and experimental than government entities. Likely partners for community-based organizations are non-profits that serve targeted populations within a community — including people who are low-income or homeless, populations with disabilities, or people from specific ethnic cultures. Organizations that provide supportive housing, job training, and childcare can reach residents who need access to digital technologies and that may have otherwise been overlooked. Community foundations can serve as neutral conveners and as sources of initial funding.

- **The business community** includes many potential partners. Telecommunication companies have an essential role. Major employers in need of trained employees can provide valued support, especially if there is a single, dominant employer within the community. Chambers of Commerce and other business groups often recognize the economic imperatives for digital inclusion. Businesses play an obvious role in the aspects of digital inclusion impacting economic development. Many businesses make a point of incorporating all segments of the community in their civic and social philanthropic activities. Businesses can also provide Internet hotspots for public access.
- **Residents**, be they individuals or representatives of neighborhood or housing associations, can help ground digital inclusion efforts in the needs that are most relevant to the community. Civic engagement begins with becoming informed on digital inclusion issues, and is followed by engaging with local organizations in order to raise peoples' awareness about the importance of adopting broadband and actively participating in a digital society.

Residents' participation on committees and task forces help institutions develop a broader perspective of the values of digital inclusion and its effect on the community; institutional and organizational leaders can expand resident participation by conducting surveys, forums, and workshops in the communities where they live and for the people they serve.

Such a diverse set of stakeholders will not inevitably come together. Participatory action will require leadership — a catalyst to initiate the participatory process, engage the broad array of stakeholders, and guide the process to success. Given its experience in digital technologies and its reputation for being non-partisan and welcoming to all, the public library is uniquely positioned to assume this leadership role.

2. Develop a shared community understanding of digital inclusion

In an area as complex as digital inclusion, community stakeholders need to begin with a shared understanding of the needs and the goals.

- What does the term digital literacy mean for the community?
- What digital technologies are currently available, and to whom?
- Where are the gaps? Who is left out and at risk of being left behind?
- What are the most important community goals of digital inclusion: economic development, education, job training, health care, emergency management, social connection?

The answers to these questions will necessarily vary by community. A key component of developing community answers should be a needs assessment that is based on systematic data collection and analysis. A shared vision should emerge from the joint learning process — a vision that describes where the community wants to be in a technology-driven world and what it needs to do to get there.

3. Create a community action plan

Grounded in the shared vision, communities need to develop an actionable plan that outlines specific goals, measures of success, timelines, and assignments of responsibility. Some communities will make large comprehensive plans; others will create more narrowly targeted plans that utilize their limited resources as effectively as possible. Either approach can work.

4. Implement the plan

Drawing on government appropriations, business contributions, philanthropy, or combination of sources, communities will need to develop the mechanisms necessary to generate the resources required to execute the plan. It is important to ensure early success that can be celebrated and promoted, creating awareness and building momentum. A well-structured monitoring effort will allow community stakeholders to provide mutual support, encouragement, and accountability.

5. Evaluate and revise the plan

Change is the only constant. Digital devices and transmission capabilities, workforce requirements, economic drivers, and population demographics are all constantly changing. Change may be incremental and easily incorporated. Or, change may be shockingly dramatic, as when a major employer leaves – or one arrives. As circumstances change, implementation plans must change as well.

In today's information-based economy, digital inclusion is not a simple, one-time checkbox. Digital inclusion will require sustained effort, ongoing evaluation, and the willingness to revise the community's plans and strategies.

Principles of digital inclusion

Seven principles comprise the backbone of the Framework, divided into [access principles](#) and [adoption principles](#). Access principles address the infrastructure a community needs to have in place in order to provide opportunities to benefit from digital life. Adoption principles look to overcome individual barriers that make use of broadband technology less likely, even when access is available.

Access principles

Principle 1: Availability

A reliable communications infrastructure is the raw material for innovation, growth, and competitive engagement in today's information-based world. Local and tribal governing bodies, the private sector, and community-based organizations that are bound to one another by geographic proximity and a shared infrastructure need to cooperate to effectively build and maintain appropriate and cost-effective broadband service. Recognizing that greater bandwidth speeds and coverage will be required in the future, these goals are intended to address the immediate needs for high-speed access while preparing for future growth.

Goals

- Access to high speed Internet is available in every household that meets or exceeds the service goals and milestones set by the Federal Communications Commission (FCC).
- Tribal lands and Native communities have affordable access to communication services and broadband technology.
- Sufficient bandwidth is available for multi-user environments, such as educational institutions, public libraries, medical facilities, museums and other organizations, to support current needs and future network demand.
- Comprehensive standards for broadband readiness in new buildings, renovations, and anchor institutions are adopted by appropriate governing bodies.
- The deployment of infrastructure is guided by right-of-way policies that remove barriers to market entry and system upgrades while limiting disruptions and ensuring other community interests.

Sample strategies

INDIVIDUAL

- Test actual upload/download speeds against advertised speeds at: <http://www.broadband.gov/qualitytest/>.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Ensure that community anchor institutions have access to cooperative high-capacity networks, such as Internet2.
- Develop partnerships with other organizations to share networks and leverage infrastructure investments.

BUSINESS SECTOR

- Support competitive policies to expand markets and encourage innovative options for providing broadband to underserved areas.

LOCAL AND TRIBAL GOVERNING BODIES

- Coordinate efforts and collaborate with other regions to reduce the costs of developing broadband infrastructure.
- Inventory existing network infrastructure, including service quality, costs, and location of community anchor institutions and validate the accuracy of information in the National Broadband Map (<http://broadbandmap.gov/>).
- Provide strategic incentives to stimulate market competition and private investment in broadband networks in underserved or isolated areas.
- Ensure that local and tribal government agreements with network providers are negotiated to obtain the highest possible download and upload speeds.

POLICY MAKERS

- Support policies and programs to evaluate the use of wireless spectrum, open additional spectrum, and provide increased bandwidth for use by public institutions.
- Promote standards for measuring upload/download speeds among local Internet Service Providers.

Principle 2: Affordability

Access to the Internet needs to be affordable for communities and their members to benefit from the expanded opportunities of digital life. Public and private entities need to partner together to lower the cost of digital access in general and to provide assistance to those who cannot bear the full cost of home access. Additionally, community members need to be able to understand their options in order to take advantage of competition in the broadband marketplace. These goals are aimed at developing pricing structures and support systems to enable businesses, institutions, and households to afford access to broadband and digital technologies.

Goals

- Internet Service Providers (ISP) provide uniform pricing information to enable consumers to easily compare plans available in the community.
- Programs that subsidize monthly Internet subscription costs are available to low-income households.
- Assistance with hardware, software, and peripheral equipment purchase and maintenance are available to low-income households.

Sample strategies

INDIVIDUAL

- Donate used technology equipment to nonprofit groups that provide equipment to low-income households and community organizations.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Raise public awareness about available Internet subsidies and assistance for purchasing computer equipment.

BUSINESS SECTOR

- Donate used computer equipment to nonprofit groups that provide hardware to low-income households and community organizations.

LOCAL AND TRIBAL GOVERNING BODIES

- Maintain local comparisons of Internet service provider prices and options.

POLICY MAKERS

- Promote standards for comparing prices of service bundles among local Internet Service Providers.

Principle 3: Design for inclusion

People with disabilities, physical or cognitive differences, and differences in age-related capabilities, language, literacy or culture may face challenges using technology and participating in digital life. As a result, they may be denied access to opportunities that could enhance well-being and promote independence. Failure to address the needs of people facing barriers negatively impacts not just those individuals but also the broader community, which will be denied their contributions to its civic, social, and economic health. The following goals reflect a commitment to erasing the boundaries between differences and reducing the obstacles to utilizing technology through principles of effective design.

Goals

- Assistance for ensuring access for people with disabilities and complying, at a minimum, with the letter, intent, and spirit of accessibility laws and regulations is provided to public and private organizations.
- People with disabilities, local and tribal governing bodies, businesses, and community organizations are provided with access to assistive devices and training about the range of technology and design solutions available to accommodate physical or cognitive differences.
- The Seven Principles of Universal Design are embedded into the design of technology-based services for local and tribal governing bodies, businesses, and community organizations. (<http://www.ncsu.edu/project/design-projects/udi/center-for-universal-design/the-principles-of-universal-design/>)
- Scripting, layout, and navigation of technology based-services are designed, localized, and optimized for multilingual and multicultural use.

Sample strategies

INDIVIDUAL

- Clearly express personal accessibility needs and preferred accommodations to technology providers, and advocate for these accommodations on behalf of others.
- Participate in volunteer programs that provide one-to-one assistance using technology to people with disabilities.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Engage in partnerships with community-based organizations that serve people with disabilities to better design services and accommodations.
- Maintain a central resource library of assistive technologies and best practices for accommodating people with disabilities.
- Hold workshops to educate businesses and community organizations about best practices in universal design.

BUSINESS SECTOR

- Align existing online presence with national standards for accessibility and language; move towards universal design for future projects.
- Invest in the development of assistive technology — with the participation of the disabilities community — to reduce cost, improve design, and enable new applications.

LOCAL AND TRIBAL GOVERNING BODIES

- Commit to adopting nationally recognized standards for technology accessibility and language; direct future projects toward universal design principles.
- Assess and manage information technology projects for government and essential services online in a manner that includes people with disabilities and other barriers in all phases of new technology development and deployment.
- Provide education, training, and incentives to businesses and organizations for creating accessible technology and complying with accessibility standards.
- Utilize public information campaigns to make the community more fully aware of the impact of technology design on people with disabilities and language or cultural differences.

POLICY MAKERS

- Support enforcement of existing accessibility laws as they apply to the digital environment.
- Support national efforts to promote the adoption and use of universal design standards for accessibility.

Principle 4: Public access

Public access to technology is necessary for community members who have little or no communication technology available in the home, need assistance to effectively use technology, or to supplement connectivity at home or in schools. Others need public access technology to assist during emergencies. Visitors need public access to be able to keep connected to family and work while away from home. Implementing the following goals will ensure that uninterrupted technology and connectivity are available through free public access.

Goals

- The community has sufficient, convenient free access to computers, Internet, wireless networks, and other communication technologies to support the needs of residents, workers, and visitors.
- Public access technology is located in safe facilities, with adequate levels of privacy, security, and accessibility for people with disabilities.
- Information about the availability and location of public access technology is widely disseminated.

Sample strategies

INDIVIDUAL

- Advocate for sufficient funding for libraries and other community-based organizations to support public access in the community.
- Share stories with policy makers about how public access technology benefits the community.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Develop partnerships between libraries and community-based organizations to provide public access to technology and technology support in high-need locations.
- Support development of community technology centers for special population groups and low-income housing complexes.
- Provide access to electronic information about community resources and services at strategic locations such as community-based organizations offering social service assistance.

BUSINESS SECTOR

- Develop partnerships and strategic alliances with libraries and other community-based organizations to provide public access equipment, trainers, and other resources.
- Inform users of business-supported wireless networks on best practices for protecting private information on public networks.

LOCAL AND TRIBAL GOVERNING BODIES

- Evaluate the public access needs of the community, develop a public access plan, and provide adequate funding and support for public access in libraries and other community institutions.
- Maintain a directory of public access providers and promote its availability.
- Support the development of wireless hotspots (including public-private partnerships) for residents and non-residents, especially in public spaces such as town centers, parks, and recreation centers.

POLICY MAKERS

- Support efforts to develop guidelines for determining the levels and types of public access necessary to support a community's needs.
- Support programs that provide resources for local public access, including E-rate and other funding programs.

Adoption principles

Principle 5: Relevance

Beyond having access to technologies, individuals, businesses, and institutions need to understand the relevance and benefits of using technology to achieve educational, economic, and social goals. Awareness of its potential benefits creates the motivation to master technology skills and learn more about effectively using broadband. These goals aim to help communities raise awareness of the value of technology and generate interest in adopting its use.

Goals

- Community institutions engage in outreach activities to help raise awareness about the benefits of using broadband and other digital technologies among non-adopters.
- Individuals are provided with help to make informed choices about Internet-based services, products, and information.
- Specially designed awareness activities and targeted content are developed to engage older adults in using technology.
- Local and tribal governing bodies, businesses, and community organizations support the creation of multilingual and multicultural content and promote use of digital technologies to diverse users.

Sample strategies

INDIVIDUAL

- Ask about digital technologies in the government, institutions, and businesses with which one interacts.
- Attend public sessions sponsored by organizations such as the public library to increase one's knowledge.
- If already knowledgeable about digital technologies, volunteer to provide tutoring or training at the public library, youth center, or senior centers.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Provide training and orientation sessions in multiple languages on digital technologies: what they are, how to use them, and the benefits and cautions around the most common applications.

BUSINESS SECTOR

- Provide information about digital services and products in plain, simple language; create informational material to help people understand their value, and offer one-on-one support to help people understand the technology and products offered.

LOCAL AND TRIBAL GOVERNING BODIES

- Create awareness campaigns about eGovernment and the value of residents accessing local and tribal governing bodies through digital technologies.
- Support the library and other institutions in promoting broad awareness of digital technologies.

POLICY MAKERS

- Advocate policies that promote plain language explanations of digital technologies to consumers and other users.

Principle 6: Digital literacy

Digital literacy skills, including the ability to find, evaluate, and use information to achieve goals, are a necessary pathway to digital inclusion. Digital communities meet the needs of their members for learning about technology and maintaining the skills necessary to take advantage of the opportunities enabled by it. The following goals help ensure that communities are able to provide effective digital literacy training to their members.

Goals

- Digital literacy training needs and assets in the community are identified and evaluated, and a strategy for meeting the digital literacy needs of the community is adopted.
- Digital literacy training in multiple languages is provided to individuals, businesses, and institutions through a variety of formats, including formal classes, real-time virtual help, and one-to-one assistance.
- Digital literacy instruction is embedded in all aspects of curriculum for K-12 and higher education, as well as in lifelong learning activities.
- Information literacy training and assistance is available within the community to help individuals learn to find electronic information and evaluate digital resources.
- Programs aimed at training consumers on the purchase, maintenance, and repair/recovery of technology equipment and services are available through community organizations.

Sample strategies

INDIVIDUAL

- Volunteer at the library to tutor a new user on basic computer skills.
- Help a neighbor connect to the Internet.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Coordinate existing efforts to provide digital skills and literacy training between libraries and other community organizations.
- Establish a computer lending program to enable home practice of basic digital literacy skills.
- Organize a “digital literacy corps” of volunteers to improve digital literacy outreach in the community.

- Create a central repository for community training resources.

BUSINESS SECTOR

- Form partnerships with libraries and CBOs to provide trainers for computer skills classes.
- Develop online mentoring programs with local schools.

LOCAL AND TRIBAL GOVERNING BODIES

- Provide online content and services that are designed for all levels of digital skills.

POLICY MAKERS

- Support strategies to train and provide digital literacy mentors to libraries and CBOs providing community technology services.
- Support the creation of a national outreach and awareness campaign on why broadband matters, focused on key segments of non-adopters.

Principle 7: Consumer safety

Consumers — both individual and institutional — need accurate, unbiased information on how to safely navigate the digital world. Engaging in digital life requires the knowledge to protect against online threats, and the ability to limit unwanted access to and use of personal information. Online safety is a personal responsibility, but it also requires collective action to educate and assist consumers and enforce standards. The following goals reflect a shared agenda for creating the safest possible online environment for the community.

Goals

- A strategy for training and educating community members about safeguarding personal information, using parental controls, protecting vulnerable populations from online bullying and exploitation, maintaining systems free of viruses, and protecting against other forms of online abuse has been adopted by all providers of Internet services and content.
- Privacy policies are adopted by businesses and government that are visible, easily accessible, and comprehensible to consumers.
- Local law enforcement agencies are equipped with strategies and the authority to pursue cybercriminals while protecting individual civil rights.
- Affordable software and technical assistance are available to support household network security for vulnerable populations.
- Information is widely disseminated through public information campaigns about individual and organizational rights and obligations with regard to intellectual property.

Sample strategies

INDIVIDUAL

- Maintain awareness of activities children are engaged in online.
- Secure home networks and accounts with strong passwords.
- Educate children about use of technology and online dangers.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Engage in coordinated educational activities and public awareness campaigns to raise the visibility of online safety issues.
- Develop procedures for securing sensitive client information.

- Develop partnerships and utilize common curriculums to educate consumers on purchasing and maintaining technology.

BUSINESS SECTOR

- Implement policies and processes for protecting customer information and for training staff in following security procedures.
- Support legislation that enables prosecution of cybercrime.

LOCAL AND TRIBAL GOVERNING BODIES

- Provide information about online safety with targeted messages to children and families, the elderly, and other vulnerable populations.
- Fully comply with policies and leading practices to ensure the security and safety of eGovernment activities.
- Ensure that contractors handling sensitive government information have effective safeguards in place to protect data.
- Coordinate efforts with other government agencies to fight security threats to public and government networks.
- Support the investigation and prosecution of cybercrime.

POLICY MAKERS

- Urge adoption of consumer rights and data protection regulations.
- Support FCC efforts to create a voluntary cybersecurity certification program.

Strategic areas for digital inclusion

The thoughtful deployment of broadband technologies in six specific strategic areas can strengthen communities and can improve the lives of their residents. Change may be evident in terms of economic success and increased new business development, academic excellence and innovation in the classroom, sustainability, or a higher quality of life for inhabitants. Once a community and its residents are connected and digitally literate, they can take advantage of the benefits of broadband in real and tangible ways. Community leaders in each of these areas working with the public can best assess local strengths, needs, and opportunities.

The six strategic areas are 1) Economic and workforce development; 2) Education; 3) Health care; 4) Public safety and emergency services; 5) Civic engagement, and, 6) Social connections.

Economic and workforce development

Communities need to develop the knowledge and skills of future workers and entrepreneurs, as well as help the current workforce update its competencies to meet the needs of employers. Broadband adoption can generate new business opportunities in economically depressed areas and can help ensure sustainable growth. The following goals are aimed at enabling productive public-private partnerships to promote jobs and prosperity, to attract and retain business and workers, and to prepare the current and future workforce to use technology productively.

Goals

- Libraries and community-based organizations engage in partnerships and cross-agency collaborations to enhance the community's workforce training capacity.
- Small businesses and local entrepreneurs are supported by eCommerce and eGovernment tools in their efforts to successfully engage with technology and promote their services online.
- Workforce technology trainers are available in sufficient numbers to support the needs of the community.
- Online career information and specialized assistance with online job-seeking is available through local and tribal governing bodies, libraries, and other community-based organizations.

Sample strategies

INDIVIDUAL

- Become a mentor or career coach, to help new users of digital technologies understand their potential uses in employment.
- Keep up-to-date with technology skills by attending training provided in the community and through online tutorials.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Provide assistance, training, tools, and resources for job seekers.
- Develop partnerships with local colleges and technical schools to help new business owners access and use technology.
- Develop public-private partnerships and cross-agency collaborations to better utilize and/or enhance the workforce training capacity of public libraries and community-based organizations.

BUSINESS SECTOR

- Make job application procedures appropriate to the skill level required for the position.
- Provide public kiosks for submitting job applications.
- Develop partnerships with libraries and CBOs to offer workforce training in specialty areas.

LOCAL AND TRIBAL GOVERNING BODIES

- Include digital technologies as part of economic development plans and community economic needs assessments.
- Include digital access in all workforce development and jobs programs.
- Encourage cross-sector partnerships to promote workforce development.

POLICY MAKERS

- Support the integration of broadband infrastructure into regional planning for economic development.
- Support the creation of innovative national online career tools.
- Encourage federal agency partnerships to foster common goals toward workforce development.

Education

Educational institutions should ensure that students have the digital skills to reach their full potential by connecting them to a diverse range of electronic resources. Technology allows learners to discover educational opportunities, improve academic performance, and prepare to fill the jobs of today and tomorrow. These goals highlight education as a community asset that can benefit from readily available technology.

Goals

- Technology is embedded in curriculum design and instruction, in both formal K-12 and post-secondary institutions to prepare students for 21st century opportunities and challenges.
- Teachers are trained by qualified instructors on the use of technology in instruction.
- Home access to hardware and Internet connections is available for households with K-12 students to support academic success and interactions among caregivers, schools, and instructors.
- Public access technology centers provide assistance for doing homework, conducting online research, completing other academic tasks using digital resources, and supplementing home access.

Sample strategies

INDIVIDUAL

- Tutor students with their online homework, research, or other academic tasks.
- Volunteer in schools to help others gain digital literacy skills.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Develop computer loan programs or lease programs to provide learners with computer hardware in the home.
- Provide awareness training for parents on educational technologies being used by students.
- Provide training and support for caregivers to enable them to interact with instructors and schools using digital technologies.
- Coordinate efforts of schools, libraries, museums and community-based technology centers to maximize delivery of in-school and out-of-school student learning tools.

BUSINESS SECTOR

- Develop relationships with K-12 and post-secondary institutions to provide educators with current information on the skills employers need for the 21st century workforce.
- Create directed learning opportunities for secondary and post-secondary students as a long-term investment in the community's workforce of tomorrow.

LOCAL AND TRIBAL GOVERNING BODIES

- Support the local school system in its digital strategies.
- Leverage cable television and other franchises to support free or reduced cost access to the Internet for students of low-income households.
- Include student access centers in government facilities supporting children and youth, such as recreation centers, libraries, and non-profit youth service providers.

POLICY MAKERS

- Support efforts to adopt standards for maintaining and securing electronic educational records.
- Support efforts to reduce barriers for obtaining E-rate funding for schools and libraries.

Health care

Efficiencies and cost-savings in health care delivery, improvement to patient care, and support for independent living and management of health concerns are all enabled by access to broadband and digital technology. Technology supports more effective health care by connecting local practitioners and hospitals with information and specialists around the world; it contributes to better safety for patients by enhancing communication between health care providers and patients; and it creates opportunities for better health education and dissemination of information. The following goals aim to ensure that residents are able to actively manage their own health, and technology is used to provide efficient health service delivery.

Goals

- Secure systems enable local medical professionals and community-based health clinics to share medical records among health care providers.
- Patients have access to user-centered online health information systems, medical records, and private online interaction with health care providers.
- Health care providers and patients are given training on how to use health information systems.
- Transitioning to online health care resources and services is managed to ensure support for new users and non-users of digital technologies, and for those who lack access to technology.

Sample strategies

INDIVIDUAL

- Volunteer to help patients navigate online information at local hospitals and health clinics.
- Utilize online health resources to improve health, manage chronic illnesses, and communicate with health care providers.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Provide access to electronic medical records and telehealth services through secure and private public access technology.
- Create consolidated online local health resources accessible through health care agencies and providers, libraries, and other community organizations.

- Provide targeted training for using health technology.
- Provide training for the public on how to locate and evaluate health information.

LOCAL AND TRIBAL GOVERNING BODIES

- Include the use of digital technologies in the development of health and fitness programs in the community.
- Promote partnerships between health care providers and institutions, such as the public library, that provide public access to digital technologies.
- Ensure that public health information is distributed through digital technologies and that adequate access is available to all populations.

POLICY MAKERS

- Support efforts to establish common standards for sharing research and clinical data.
- Support efforts to ensure that health care delivery locations have access to sufficient bandwidth for high-demand applications.

Public safety and emergency services

Residents and first responders need integrated communications systems for emergency and disaster preparation, response, and recovery. Communities can strengthen their emergency responsiveness through effective deployment of digital technologies: enabling better ways to call for help, coordinate responses, and distribute information during emergencies. Technology can also be mobilized to prevent and investigate criminal activity and to empower residents to improve neighborhood safety. The following goals reflect a need for coordinated, community-wide involvement in planning, preparing, and responding to emergencies and public safety threats in order to create a safe and resilient community.

Goals

- Communities have sufficient secure, resilient, and redundant wireless broadband capacity to support emergency responders throughout planning, preparing, responding, and recovering from emergencies.
- Interoperable and redundant emergency alert networks are in place across mobile, wireless, and wired networks via Common Alerting Protocols.
- Public libraries, schools, and other community institutions provide digital access to residents or evacuees during emergencies.
- Digital tools are used for community-developed online content relating to public safety, emergency preparation, and response.
- Alternative emergency plans account for instances when technology is not available and for how to respond to the needs of community members who do not have technology access.

Sample strategies

INDIVIDUAL

- Sign up for text and email services offered by local emergency services.
- Create a neighborhood emergency communication network using social media technologies.
- Make a personal plan for emergencies, including contingencies for the loss of digital technologies.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Engage actively in emergency and disaster planning to identify the range of activities that the institution can support in education, prevention, planning, response, and recovery.

- Develop continuity plans for the institution that provide for resiliency and quick recovery in order to support the community. Specifically create contingency plans for the loss of digital technologies.
- Train staff and test the emergency plans.
- Serve as an information center on the wide range of ways that people can be safe in normal and extreme conditions.

LOCAL AND TRIBAL GOVERNING BODIES

- Address issues of digital access and inclusion in the comprehensive emergency plan. Specifically address the resiliency of digital technologies in the community and make contingency plans for the loss of the technologies and for rapid recovery.
- Actively include the public library and other institutions involved with digital inclusion in planning, training, and testing of emergency plans.
- Make emergency plans, and other public safety information available digitally, with specific emphasis on populations that have special needs.
- Invest in proven current digital technologies such as enhanced 911 systems, computer aided dispatch, and electronic mapping technologies.
- Provide online resources for residents to use for developing personal disaster-preparedness plans.

POLICY MAKERS

- Support the development of national interoperable public safety wireless broadband networks.
- Support national efforts to ensure that broadband communications are preserved during emergencies.

Civic engagement

Electronic interaction between community institutions, government agencies, and individuals creates enhanced opportunities for active participation in community affairs. Community members can make use of technology to develop and promote a wide range of civic activities and connections that enrich public life while expanding the network of involved participants. Technology can also help enhance government transparency and accountability. The following goals aim to create increased opportunities for the public to participate in governance, by bridging officials and constituents online and by providing the means for people to voice their opinions and influence decisions.

Goals

- The public connects directly to governments and their agencies, and with each other, in order to learn about and discuss public issues and policies.
- Online access to government information and services meets interoperability standards and is appropriate for users of all skill levels and language needs.
- The community has convenient, secure, and private digital access to government resources and services.
- Technology is utilized to organize community events, to encourage volunteerism and youth participation, and to facilitate problem-solving for community concerns.

Sample strategies

INDIVIDUAL

- Provide feedback to government agencies about online services.
- Join — or start — community networks to communicate with others about shared concerns.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Provide a central civic engagement portal for information to residents about local events and resources, as well as online government services.
- Encourage the use of blogs and notification tools so that libraries and CBOs that help people navigate public information can be kept updated with changes to government websites.
- Become “online town halls” for eDemocracy, for participants to shape public agendas and discuss public issues.

- Embed civic engagement and civic knowledge in education and digital literacy training.

LOCAL AND TRIBAL GOVERNING BODIES

- Educate community members about their civic role; provide opportunities for them to interact with government agencies and officials using tools that fit individual or specific community needs.
- Provide residents with the ability to create “My eGovernment” to personalize their interaction with government agencies and officials.
- Encourage the private sector to work with open information, and to develop new applications and ways of using government data.
- Apply care to initial design, updates, and the frequency of redesign to minimize users’ confusion and the need to re-familiarize themselves with government websites.

POLICY MAKERS

- Dedicate resources to develop open standards for government information.
- Promote the adoption of social media technologies that government can use to interact with residents.

Social connections

Individual members of a community should have access to technologies that promote social engagement and the pursuit of independent learning and creative interests. Technology provides new opportunities for people to express themselves, enjoy activities with family and friends, and get support for personal problems. Lifelong learning and access to new ideas can also spark innovation and creativity. The following goals reflect the ability of technology to foster relationships that support quality of life and well-being in digital communities.

Goals

- Interactive, high-quality multi-cultural content is available through public libraries, museums, archives, and other cultural institutions.
- Programs to encourage development of local content and participation in social networks are available for vulnerable and diverse community members.
- Intergenerational ties are strengthened through technology interaction between youth and older community members.
- The community supports the use of technology for digital preservation and appropriate sharing of local history and contemporary culture in order to build an enhanced sense of community, belonging, and continuity.
- Support and tools are available to produce, archive, and distribute local media programs and other digital content produced by local voices.
- Digital technologies are used as a means of preserving and sharing diverse cultures, if appropriate.

Sample strategies

INDIVIDUALS

- Help an older friend or relative connect to online support communities or communicate with distant family members.
- Connect with like-minded people around an interest area or hobby.
- Provide translation services to community organizations serving multilingual populations.

LIBRARIES, CBOS, AND OTHER COMMUNITY ANCHOR INSTITUTIONS

- Maintain directories of locally produced content.

- Design a digital story project for collecting local history.
- Support community-based design efforts to mobilize rapid development of high-quality local content by maintaining technology labs and incubators.
- Ensure that online content is available in languages utilized by the community.
- Develop content and applications geared towards a variety of different abilities and cultures.

LOCAL AND TRIBAL GOVERNING BODIES

- Provide funding for cultural institutions to develop local content.

BUSINESS SECTOR

- Use social networking to promote local recreational activities and events.
- Support crowd-sourcing development of new applications.

POLICY MAKERS

- Advocate for use of social networking to facilitate respectful conversations among people with differing viewpoints.



ABOUT THE PARTNERS

The Institute of Museum and Library Services is the primary source of federal support for the nation's 123,000 libraries and 17,500 museums. The Institute's mission is to create strong libraries and museums that connect people to information and ideas. The Institute works at the national level and in coordination with state and local organizations to sustain heritage, culture, and knowledge; enhance learning and innovation; and support professional development. To learn more about the Institute, please visit www.imls.gov.

University of Washington

The Technology & Social Change Group (TASCHA) at the University of Washington Information School explores the design, use, and effects of information and communication technologies in communities facing social and economic challenges. With experience in 50 countries, TASCHA brings together a multidisciplinary network of social scientists, engineers, and development practitioners to conduct research, advance knowledge, create public resources, and improve policy and program design. Our purpose? To spark innovation and opportunities for those who need it most.

ICMA, the International City/County Management Association, advances professional local government worldwide. Our mission is to create excellence in local governance by developing and advancing professional management to create sustainable communities that improve lives worldwide. ICMA provides member support; publications; data and information; peer and results-oriented assistance; and training and professional development to nearly 9,000 city, town, and county experts and other individuals and organizations throughout the world. The management decisions made by ICMA's members affect millions of individuals living in thousands of communities, from small villages and towns to large metropolitan areas.

CONTACT

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RECOMMENDED CITATION

Institute of Museum and Library Services, University of Washington Technology & Social Change Group, International City/County Management Association. (2012). *Building Digital Communities*. Washington, DC: Institute of Museum and Library Services.

DOWNLOAD THE COMPLETE REPORT

Building Digital Communities: A Framework for Action. This is the final report to IMLS from the University of Washington and the International City/County Management Association. It explains how the framework was developed from the initial stages through the community and leadership forums. It includes a comprehensive bibliography arranged by subject. — available at tascha.uw.edu/digital-inclusion-framework

General Brown County Broadband Info :

August Neverman
Broadband & BCCAN Director
Brown County
920-448-7860 (desk/mobile)

<https://www.browncountywi.gov/community/brown-county-broadband-speed-test-initiative/general-information/>

List of ARPA \$ for all townships muni's

https://docs.legis.wisconsin.gov/misc/lfb/misc/135_updated_information_on_state_and_local_fiscal_recovery_funds_under_arp_7_21_21.pdf

Department of Commerce - Economic Development Administration

The Economic Development Administration gives grants for broadband to support regional and local economic development and assistance in scoping out those proposals.

NTIA Grants

<https://www.ntia.doc.gov/category/grants>

USDA

- Rural Broadband Program
- Community Connect Program
- ReConnect Program
- Distance Learning and Telemedicine
- Telecommunications Infrastructure Loans.
- Rural Business Development Program
- <https://www.usda.gov/broadband>

WI PSC *pending guidance

<https://psc.wi.gov/Pages/Programs/BroadbandGrants.aspx>

Broadband Expansion Grant, Fiscal Year 2022 - Coming Soon

IIJA

Broadband: \$65 billion *pending guidance

- Makes grants to states for broadband deployment \$42.45 BILLION IN FY 2022
- Creates new "middle mile" competitive grants to facilitate broadband deployment \$1 BILLION OVER FIVE YEARS
- Extends the Emergency Broadband Benefit program - The program will be renamed the "Affordable Connectivity Program," and the monthly benefit will be reduced from \$50 to \$30 for consumers.
- Creates a new competitive grant program for broadband \$1.25 BILLION OVER FIVE YEARS

USAC

- The High-Cost program
- The Lifeline (low income) program, including initiatives for Native Americans
- The Schools and Libraries program, commonly referred to as E-rate
- The Rural Health Care program

Other programs

- Bureau of Indian Affairs: National Tribal Broadband Grant
- Emergency Management Performance Grants
- Rural Digital Opportunity Fund
- Department of Health and Human Services: Telehealth Network Grant Program
- Some funding in Coronavirus Aid, Relief, and Economic Security (CARES) Act

[https://www.internetsociety.org/wp-content/uploads/2021/03/Guide to Federal Broadband Funding Opportunities in US-EN.pdf](https://www.internetsociety.org/wp-content/uploads/2021/03/Guide%20to%20Federal%20Broadband%20Funding%20Opportunities%20in%20US-EN.pdf)

<https://www.rcrwireless.com/20210610/network-infrastructure/broadband-funding-everywhere-a-rundown-of-major-federal-efforts>

<https://www.fiberbroadband.org/page/funding-374>

MEETING MINUTES
Eau Claire County
Broadband Committee
Thursday, October 21, 2021
4:00 P.M.
Remote Meeting via WebEx Events

Those wishing to make public comments must submit their name and address no later than 30 minutes prior to the meeting to rod.eslinger@co.eau-claire.wi.us

Comments are limited to 3 minutes; you will be called on during the public comment section of the meeting. Written comments will also be accepted and should be submitted to the e-mail address listed above.

Join WebEx Meeting: <https://eauclairecounty.webex.com> Meeting ID: 167 775 1184, Password: qMPYqiCn574

*Meeting audio can be listened to using this Audio conference dial in information.

Public Access: Dial in Number: 1-415-655-0001 Access Code: 167 775 1184 ##

**Mute your device upon entry*

Members Present: Donald Mowry, Joe Alf, Luke Hanson, Tim Laubach, Collin Pomplun, Lynn Thompson, Scott Hoffman, and Mark Zuber.

Staff Present: Rodney J. Eslinger, Director of Planning and Development, Greg Dachel, Director of Information Systems

Others Present: Dave Hayden, Doug Carlson, Haley Tollefson – LTD, Bob Nelson

1. Call to order and confirmation of meeting notice.

The meeting was called to order at 4:00 p.m. and the meeting notice was confirmed.

2. Roll Call – Members present are noted above.
3. Public Comment (limit to 3 minutes per person) – None
4. LTD Broadband Presentation – **Discussion**

Haley Tollefson of LTD Broadband presented to the committee details of their RDOF auction award and area (Hickory Hills Golf Course vicinity). Currently LTD does not have a presence in Eau Claire County. She noted that LTD would offer 1 gig fiber to the premise and noted there are currently 37 potential service locations within the auction area. Her company is tackling the RDOF auction by density of the area to be served.

5. SpaceX Starlink Pilot Project Update – **Discussion/Action**

Greg Dachel gave the committee an update on the Starlink pilot project. He noted there are still a few locations are experiencing lower download and upload speeds.

6. PSC ARPA Grant Announcement – **Discussion**

24/7 Telecom was awarded a PSC ARPA grant to expands its broadband infrastructure in the Town of Brunswick that will serve 13 businesses and 254 residential locations.

7. PSC ARPA Fund Match Application – **Discussion/Action**

Rod Eslinger presented the draft PSC ARPA Fund Match application to the committee. He noted that he has received comments back on the application from Norb Kirk, Finance Director, Chair Mowry, IS Director Greg Dachel, Mark Zuber and Corporation Counsel Tim Sullivan. Mark Zuber noted that the select circles in section V. do not populate when clicked. Mr. Eslinger said he'll correct that in the master copy. Mr. Zuber felt that the application contains everything that the committee will need to award the match funds.

Mark Zuber motioned to approve the use of the ARPA Fund Match application as presented, Joe Alf seconded the motion; motion carried on a voice vote with all in favor of the motion.

8. County ARPA Fund Match Application – **Discussion/Action**

Mark Zuber updated the committee on the Town of Drammen's broadband expansion project. He indicated that the main cable installation is complete. They still need to port over the phone numbers from the previous carrier. The town will be making a request for County ARPA funds as soon as the application is complete.

9. Town/County Intergovernmental Agreements for the use of County ARPA funds – **Discussion**

Mr. Eslinger presented the final draft of the intergovernmental agreement and he indicated that Corporation Counsel Sullivan was the drafter of the document. The committee reviewed the document and questioned who would sign for the county.

10. Drammen's request for County ARPA fund match for its Broadband infrastructure project - **Discussion/Action**

Mark Zuber briefly went over the town's draft application and said that the application will work well. He noted that this is not their final application, so no action is needed by the committee.

11. Augusta, Fairchild, Bridge Creek, Clear Creek Broadband Expansion Committee – **Discussion**

Mark Zuber and Tom Lange (maybe Don) will be attending a meeting with officials from Augusta, Fairchild, Bridge Creek and Clear Creek on November 2nd to discuss the next steps on expanding broadband in their communities. The group will report back at the next meeting.

12. UW-EC Digital Literacy Program/Application – **Discussion**

Don Mowry presented on the UW-EC Digital Literacy program. He noted there are several students are waiting patiently to be called upon. Potential partners for this program are Starlink participants, ADRC and the Towns Association.

13. Digital Inclusion – **Discussion/Action**

Don Mowry introduced the committee to "digital inclusion" and what it may become in Eau Claire County. He mentioned PC for People, Twin Cities program and connecting with Dr. Jeneise Briggs, County's EDI Coordinator, and County Administrator Schauf regarding requesting ARPA to develop a startup fund to support a digital inclusion program in Eau Claire County.

14. Review/Approval of September 16, 2021, Committee Meeting Minutes – **Discussion/Action**

The committee reviewed the meeting minutes of September 16, 2021, Mark Zuber motioned to approve the minutes as presented, Lynn Thompson seconded the motion; motion carried on a voice vote with all in favor of the motion.

15. Next Steps and future meetings – **Discussion/Action**

- a. Future Meeting: November 18, 2021.
- b. Town/City Meeting Update
- c. 24/7 update regarding the Union project
- d. Digital Inclusion update
- e. Charter update
- f. Century Link (Lumen) update
- g. Town of Drammen ARPA application

16. Adjourn

Adjourn Action: Meeting adjourned by unanimous consent at 5:33 p.m.

Respectively submitted by,

Rodney J. Eslinger,
Clerk for the Broadband Committee
Director of Planning and Development

MEETING MINUTES
Eau Claire County
Broadband Committee
Thursday, November 18, 2021
4:00 P.M.
Remote Meeting via WebEx Events

Those wishing to make public comments must submit their name and address no later than 30 minutes prior to the meeting to rod.eslinger@co.eau-claire.wi.us

Comments are limited to 3 minutes; you will be called on during the public comment section of the meeting. Written comments will also be accepted and should be submitted to the e-mail address listed above.

Join WebEx Meeting: <https://eauclairecounty.webex.com> Meeting ID: 167 775 1184, Password: qMPYqiCn574

*Meeting audio can be listened to using this Audio conference dial in information.

Public Access: Dial in Number: 1-415-655-0001 Access Code: 167 775 1184 ##

**Mute your device upon entry*

Members Present: Donald Mowry, Luke Hanson, Thomas Lange, Lynn Thompson, Ann Nielsen, and Mark Zuber.

Staff Present: Rodney J. Eslinger, Director of Planning and Development, Greg Dachel, Director of Information Systems

Others Present: None

1. Call to order and confirmation of meeting notice.

The meeting was called to order at 4:05 p.m. and the meeting notice was confirmed.

2. Roll Call – Members present are noted above.
3. Public Comment (limit to 3 minutes per person) – None

Chair Mowry amended the agenda to act on items 7 and 8 due to a quorum being available for 30 minutes.

7. Town/County Intergovernmental Agreements for the use of County ARPA funds – **Discussion/Action**

The committee discussed the Town of Drammen’s Intergovernmental Agreement. Tom Lange motioned to approve the Town of Drammen’s Intergovernmental Agreement as presented, Lynn Thompson seconded the motion; motion carried on a voice vote with all in favor of the motion.

8. Drammen’s application for County ARPA fund match - Discussion/Action

The committee reviewed and discussed the Town of Drammen’s County ARPA Fund match application. Mark Zuber indicated that he was recusing himself from the discussion. Lynn Thompson motioned to approve the Town of Drammen’s application for County ARPA fund match as presented, Luke Hanson seconded the motion; motion carried on a voice vote with all in favor of the motion.

4. SpaceX Starlink Pilot Project Update – **Discussion/Action**

Greg Dachel gave the committee an update on the Starlink pilot project.

Luke Hanson left the meeting at 4:30 pm.

5. 2022 PSC of Wisconsin Grant Application Announcement – **Discussion**

The PSC will be opening the application period to accept broadband application on December 1st. There is a webinar on December 8th to explain the application filing process.

6. Digital Inclusion Regional Approach/Update – **Discussion/Action**

- a. Resolution to create a coalition committed to county-wide digital inclusion – Discussion/Action
- b. Federal Infrastructure Bill – Broadband – **Discussion**
- c. Application to the UWEC Community Leadership Class – **Discussion/Action**

Chair Mowry delayed this item until the December meeting.

9. Community Outreach Updates – **Discussion**

- a. Joint Meeting Bridge Creek, Fairchild, Augusta
- b. Town of Washington

Broadband Committee members Mark Zuber and Tom Lange presented at a joint meeting with municipal officials from the Town of Fairchild, Village of Fairchild, Augusta, and Bridge Creek. Mr. Zuber shared the Town of Drammen's experience working with two ISP's to build out the broadband infrastructure in the town. Mr. Lange stated he encouraged the communities to reach out to TCC. It was also discovered that the CINC fiber is very close to the library in Fairchild and efforts were already underway to extend fiber to the library. Todd Meyer, the Town Chair of Town of Fairchild, was going to connect with Charter/Spectrum regarding the RDOF.

Rod Eslinger briefed the committee on discussions he held with town officials from the Town of Washington and the Town of Pleasant Valley.

10. Wisconsin Broadband Summit Webinar – **Discussion**

Chair Mowry and Greg Dachel provide a summary of the summit meeting.

11. Review/Approval of October 21, 2021, Committee Meeting Minutes – **Discussion/Action**

Due to lack of a quorum, this item was moved to the December meeting for action.

12. Next Steps and future meetings – **Discussion/Action**

- a. Future Meeting: December 16, 2021.
- b. Meeting Minutes from October 21 and November 18

13. Adjourn

Adjourn Action: Meeting adjourned by unanimous consent at 5:00 p.m.

Respectively submitted by,

Rodney J. Eslinger,
Clerk for the Broadband Committee
Director of Planning and Development