BROADBANDUSA
CONNECTING AMERICA'S COMMUNITIES

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

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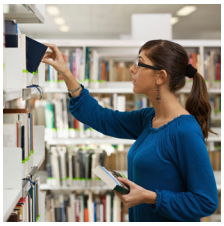

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FOREWORD

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.

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.

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.
- 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, research centers 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) 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*. 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*, 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* 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-%206-2013.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, 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-OyOHenS_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.
- 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.

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

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 (basic computer use, job search, media production, network certification, etc.)? 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?

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, 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. 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* 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
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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 preform 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), 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.
- Elementary schools: *Digital Wish*, which is dedicated to one-on-one computer-based education, provided trainers and equipment.
- Town governments: The *Snelling Center for Government* provided consultations and guidance in building municipal websites.
- Public libraries: The *Vermont Department of Libraries* developed public broadband initiatives and planned for technology purchases.

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
- 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 which 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, 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 publication 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 your 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."

— Maria Alvarez Stroud, University of Wisconsin-Extension

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* 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*

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_tookit_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 publication 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	✦ University of North Georgia and four counties form partnership to spur regional economic development by building a broadband network (regional fiber backbone)
2008	✦ Partners receive rural economic development grant from a consultant and Georgia Tech to carry out a broadband feasibility study
2009	✦ Two electric cooperatives join and incorporate NGN ✦ NGN receives NTIA BTOP funding
2010	✦ Establish NGN office
2011	✦ Complete 260-mile core fiber ring
2012	✦ Five core network point of presence (C-POPs) activated ✦ Georgia Communications Cooperative (GCC), a member-owned cooperative services provider, created by NGN
2013	✦ 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	✦ 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	✦ Advisory council holds hearings and interviews community-based organizations, workforce development groups, universities, and top corporate executives ✦ Council issues recommendations in *The City that Networks: Transforming Society and Economy Through Digital Excellence*
2008	✦ A study by the City, the MacArthur Foundation, and the Illinois Department of Commerce and Economic Opportunity identify Chicago areas with low broadband use: *Digital Excellence in Chicago: A Citywide View of Technology Use* ✦ The cities of Chicago, Boston, and San Francisco commissioned a study on ways to expand broadband infrastructure and access in large American cities: *Municipal Broadband Market Assessment* ✦ 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	✦ The City issues its *Digital Excellence Action Agenda* ✦ Smart Communities implementation plan announced: *Smart Communities Master Plan* ✦ 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*
2010	✦ *Smart Chicago* begun as formal partnership among the City of Chicago, MacArthur Foundation, and Chicago Community Trust, which administers the Smart Chicago Trust Fund ✦ 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	✦ Smart Chicago partnership spins off separate non-profit, the *Smart Chicago Collaborative* ✦ Residents involved in literacy classes ✦ Small and mid-size businesses participate in technology needs assessment ✦ Second round of surveys measure results in neighborhoods
2012	✦ 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: *World Business Chicago Plan for Economic Development and Growth* ✦ Launched *Smart Health Centers*
2013	✦ University researchers carry out city-wide technology use assessment ✦ Third round of surveys measure results in neighborhoods ✦ Mayor releases *Chicago Technology Plan* — a digital roadmap ✦ Plan incorporates digital literacy and broadband adoption goals
2014	✦ 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 will you reach intended audience?
  - ☐ Will you use community ambassadors as part of outreach efforts?
- ☐ Language skills needed?
- ☐ Hours/access?
- ☐ Childcare needs?
- ☐ 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**				
Broadband Offerings	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
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**				
Current Assets	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
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**				
Current Liabilities	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
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 Finanacing 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