

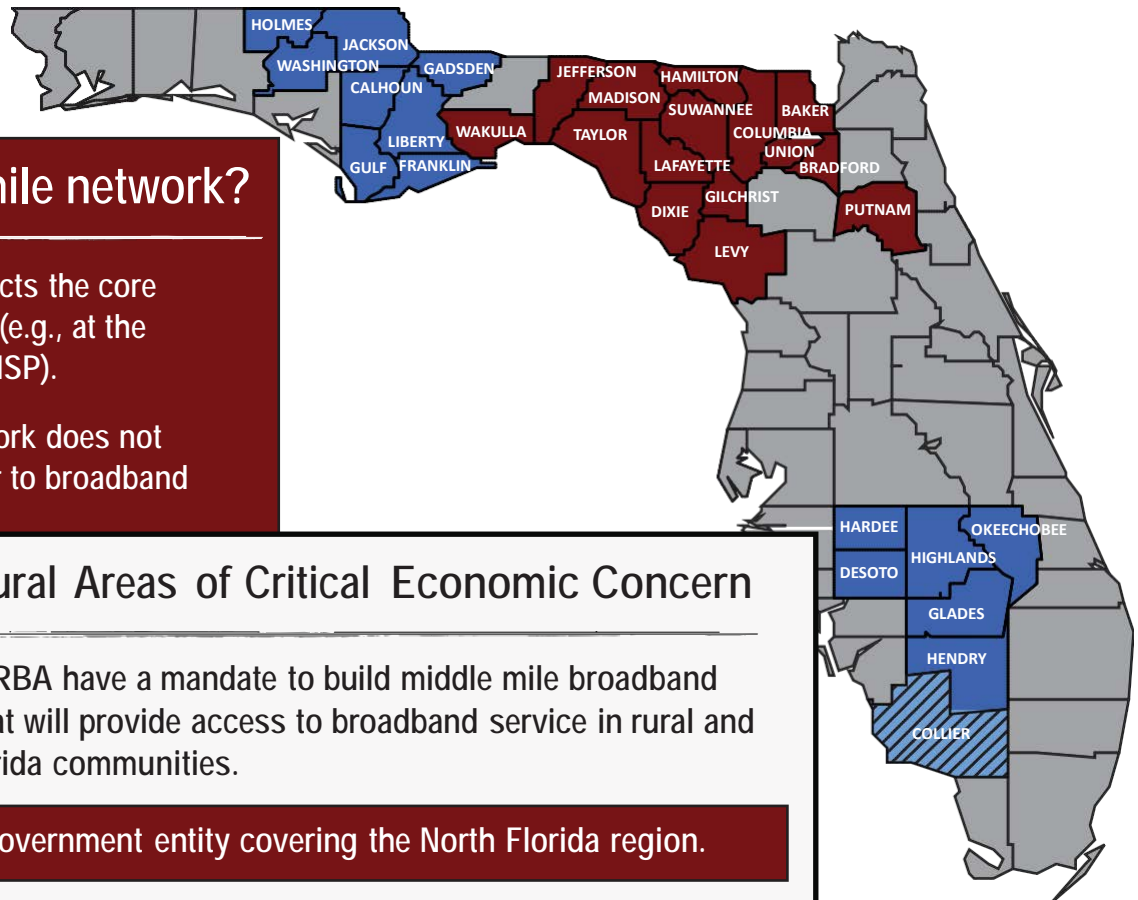


# Designing & Implementing Broadband Needs Assessments for Rural Anchor Institutions in Florida

Status as of July 1, 2012

As part of the American Recovery and Reinvestment Act, the National Telecommunications and Information Administration (NTIA)—through its Broadband Technology Opportunities Program (BTOP)—has awarded Comprehensive Community Infrastructure grants to connect anchor institutions to new or improved broadband Internet facilities (NTIA, n.d.). The North Florida

Broadband Authority (NFBA) and Florida Rural Broadband Alliance (FRBA) each received over \$20 million in BTOP funds to build middle mile networks in rural Florida. In support of these projects, the study team at the Information Use Management & Policy Institute (Information Institute) conducted broadband needs assessments for anchor institutions in these rural regions.



## What is a middle mile network?

A middle mile network connects the core network to the local network (e.g., at the Internet Service Provider, or ISP).

However, a middle mile network does not directly connect the end user to broadband Internet.

## Florida's Rural Areas of Critical Economic Concern

The NFBA and FRBA have a mandate to build middle mile broadband infrastructure that will provide access to broadband service in rural and underserved Florida communities.



is a government entity covering the North Florida region.



is a regional collaboration of local governments, community activists, and economic development agencies from rural and economically disadvantaged communities in Northwest and South Central Florida.



\*The City of Immokalee in Collier County is part of FRBA, but the rest of the county is not.

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## Quick Facts About Rural Anchors

There are 67 counties in Florida  
About half are rural

There are 10,000+ anchor  
institutions in Florida  
Fewer than 1,000 of these  
are in NFBA and FRBA

## Understanding Anchor Institution Broadband Needs

Research finds that inefficient and poorly designed network configurations severely compromise the speed and quality of many anchor institutions' broadband services. Also, many staff members do not know the speed or quality of their front door broadband connections and do not understand the ways in which speed to the workstation can be degraded (McClure, Mandel, Snead, Bishop, & Ryan, 2009). This project seeks to (1) increase knowledge of anchor institutions' broadband connections, network configurations, and ways in which they can be improved; (2) understand staff training needs in areas such as broadband networks, network deployment, and broadband-enabled applications; and (3) develop metrics for diagnostic evaluations of anchor institutions' Internet network deployment and configurations.

## Multi-Method Approach

### DATA COLLECTION

#### ONLINE SURVEY

Using census of anchor institutions in each service area (NFBA and FRBA)

#### FOCUS GROUPS

Using representatives of anchor institutions that completed the survey

#### ONSITE DIAGNOSTICS

Onsite visits to improve broadband connectivity & network configurations

### DATA ANALYSIS

ONLINE SURVEY: Descriptive statistics  
FOCUS GROUPS: Content analysis  
DIAGNOSTICS: Qualitative analysis  
TRIANGULATION: All three data sets + findings from the literature

### FINDINGS AND RECOMMENDATIONS

## Anchor Institution Types

- City / county government
- Libraries
- Emergency management
- Museums
- Federally qualified health clinics
- Public schools
- Rural health clinics
- First responders
- School district offices
- Higher education
- Workforce boards
- Hospitals

## References

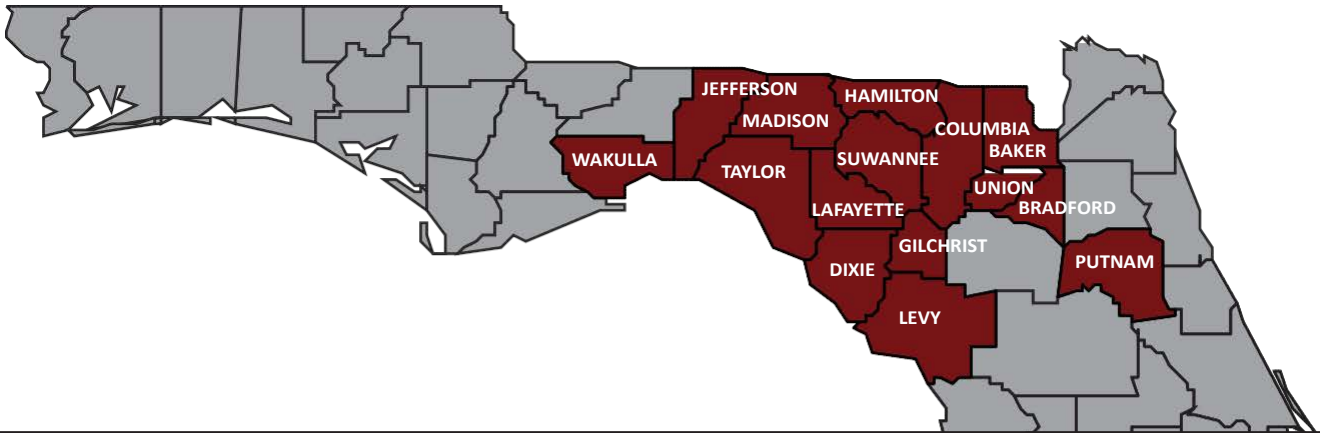
- McClure, C. R., Mandel, L. H., Snead, J. T., Bishop, B. W., & Ryan, J. (2009). *Needs assessment of Florida public library e-government and emergency management broadband services*. Tallahassee, FL: Florida State University, College of Communication & Information, Information Use Management & Policy Institute.
- National Telecommunications and Information Administration. (n.d.). *About*. Washington, D.C.: U.S. Department of Commerce. Retrieved September 9, 2010, from <http://www2.ntia.doc.gov/about>

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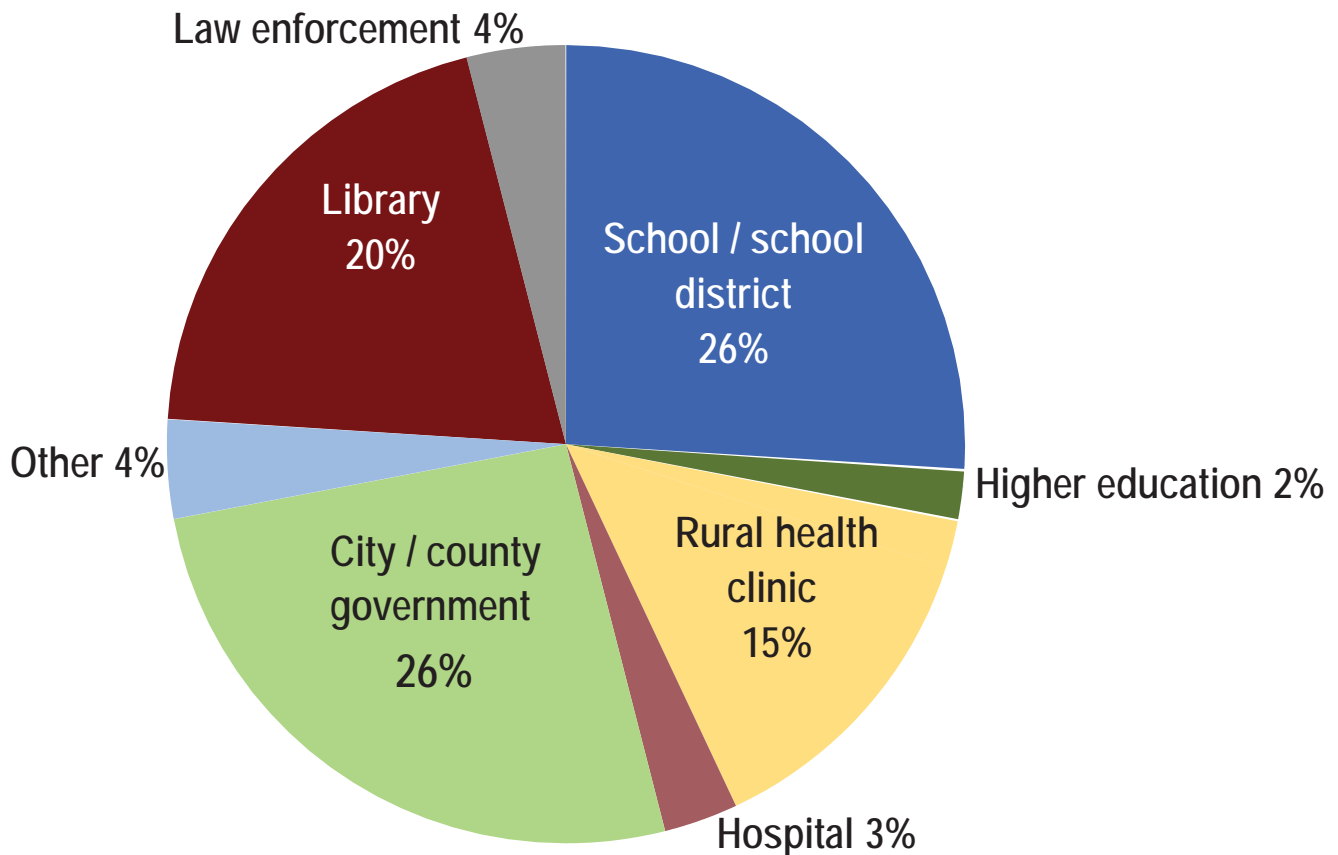
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## Selected Survey Findings

In support of the NFBA and FRBA BTOP-funded middle mile projects, the study team at the Information Institute fielded two surveys of anchor institutions to better understand their broadband needs and issues: one for institutions in the NFBA service area and another for institutions in the FRBA service area. The following findings are from responses to the NFBA survey.



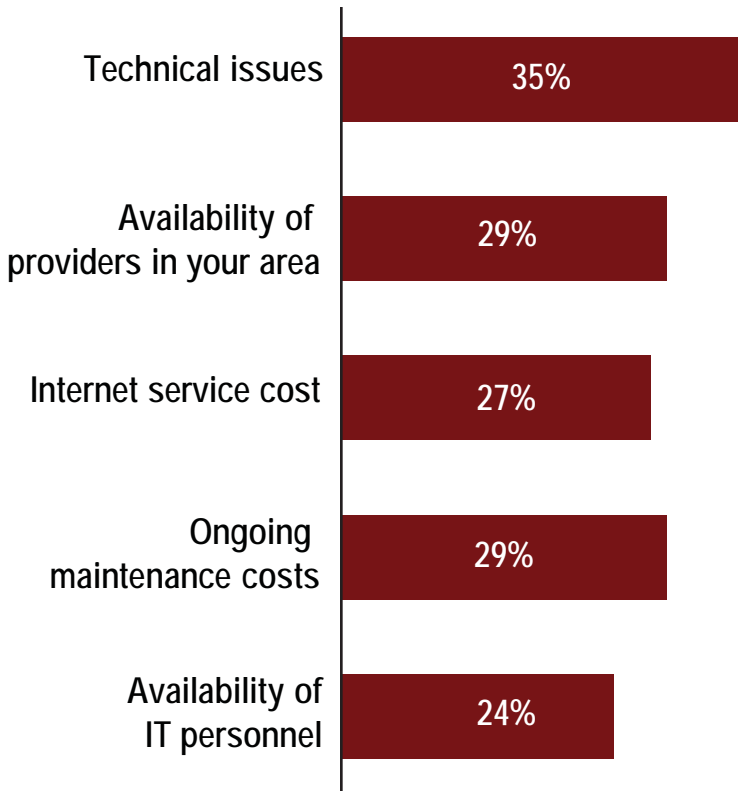
### Type of Anchor Institution



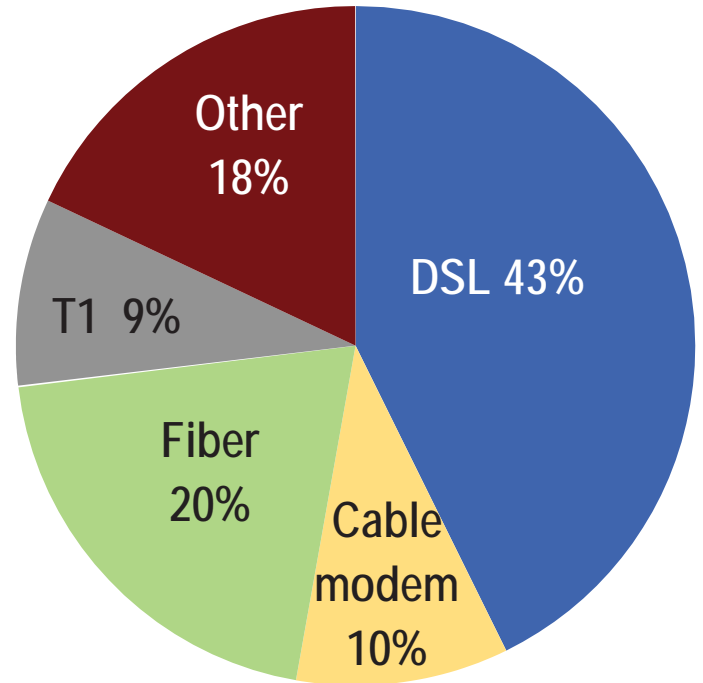
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## Selected Survey Findings, continued

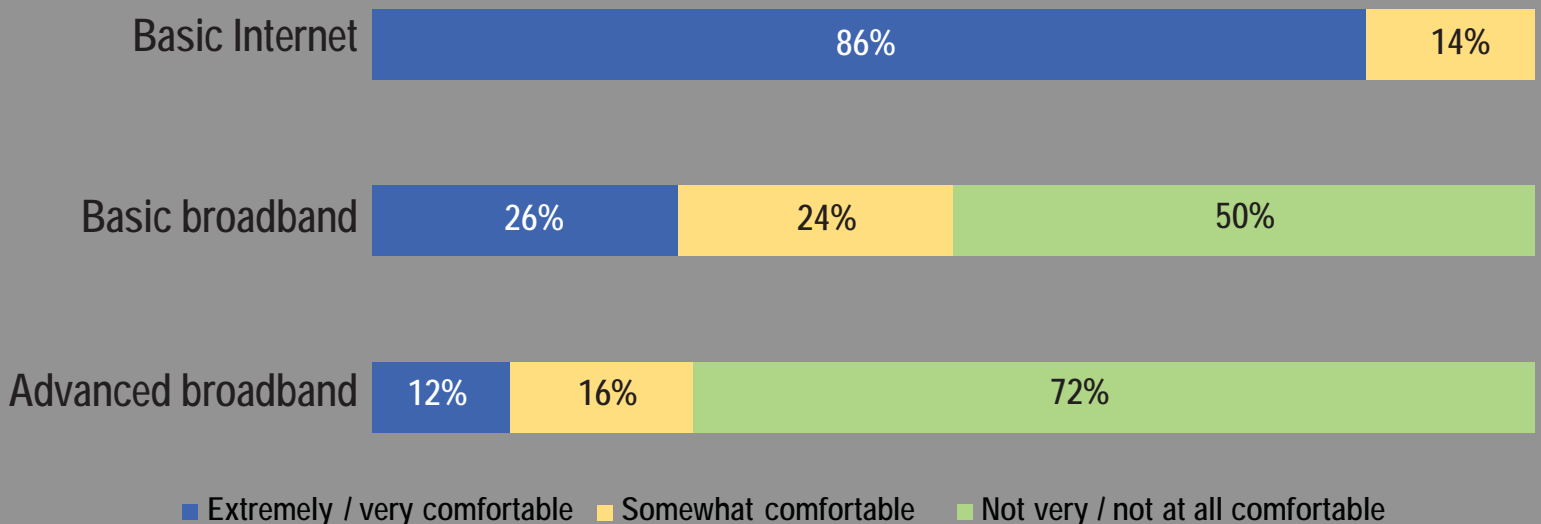
### Obstacles to Increasing Broadband Speed



### Type of Internet Connection

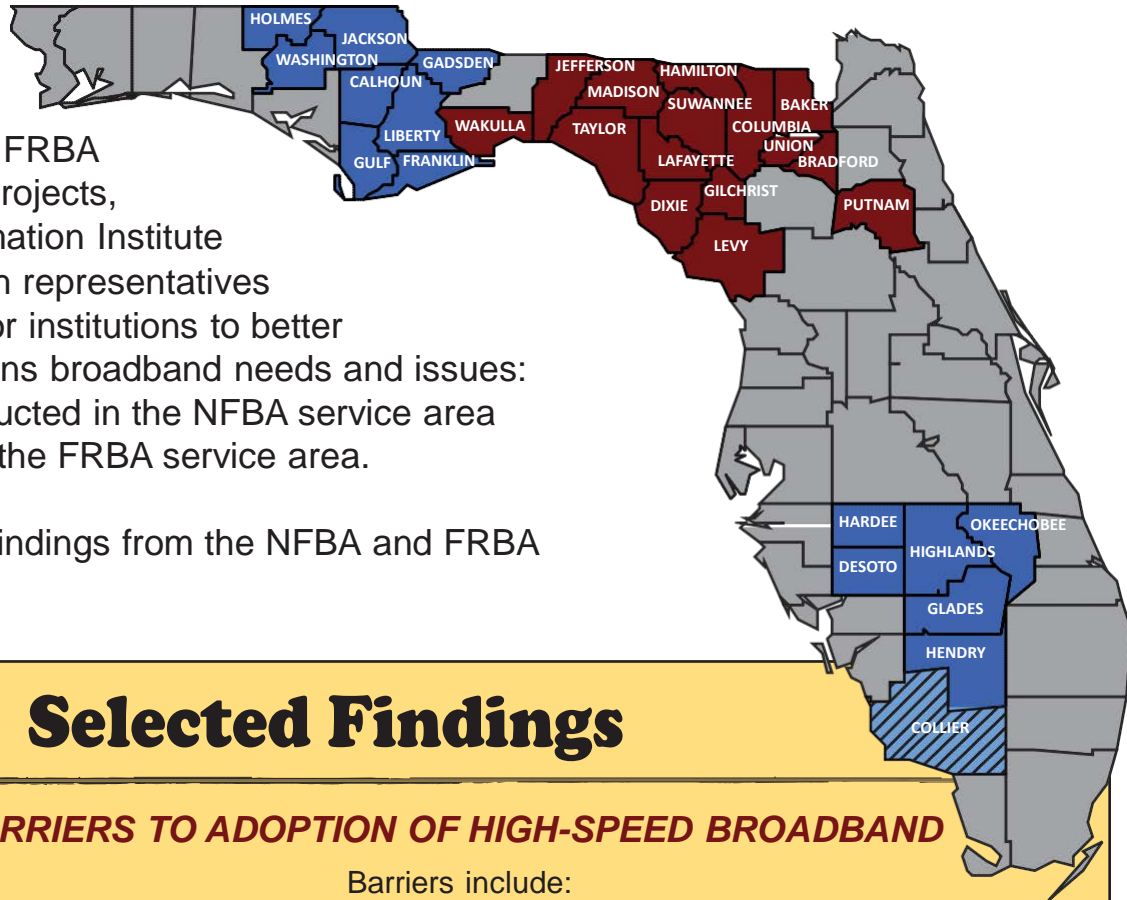


## Staff Comfort with Technology



■ Extremely / very comfortable ■ Somewhat comfortable ■ Not very / not at all comfortable

## Selected Focus Group Findings



In support of the NFBA and FRBA BTOP-funded middle mile projects, the study team at the Information Institute conducted focus groups with representatives from multiple types of anchor institutions to better understand anchor institutions broadband needs and issues: six focus groups were conducted in the NFBA service area and five were conducted in the FRBA service area.

The following are selected findings from the NFBA and FRBA focus groups.

### Selected Findings

#### **ENABLERS & BARRIERS TO ADOPTION OF HIGH-SPEED BROADBAND**

Enablers include:

- Knowledge of broadband, its use, and how to deploy it
- Existence of high-quality internal network
- Administrative leadership and support
- Available and trained staff
- Access to ISP with inexpensive broadband connections
- Ability to develop a broadband strategic plan
- Interest and enthusiasm to experiment with and promote innovative broadband applications

Barriers include:

- Lack of resources
- Limited knowledge or awareness about broadband, broadband applications, and their impacts on organizational effectiveness or services
- Inability to contract successfully with ISPs
- Unsuccessful prior attempts to upgrade or reduce the cost of broadband
- Resistance to change and/or organizational inertia
- Old and outdated network hardware and software
- Inability of various institutions to work together on broadband planning and economic development

#### **BROADBAND & ECONOMIC DEVELOPMENT**

- Lack of knowledge of the importance of economic development to the middle mile project
- Questions about what the broadband economic development plan is and who is in charge of it
- Uncertainty about how to convince companies to move to their county because of broadband availability
- Knowledge that broadband alone will not bring new business; also need schools, government services, etc.
- Skepticism about role of faster, less expensive broadband in facilitating economic development in rural North Florida communities

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## Additional Selected Focus Group Findings

### **ORGANIZATIONAL CONTEXT**

- Broad array of Internet connection types
- Range of ISPs
- Varying existing costs, but must decrease in future
- Differing internal networks and configurations

### **POLITICS & REGULATORY ISSUES**

- Questions about why ISPs have not already made inexpensive high-speed broadband available
- Difficulty understanding open markets vs. competitive markets vs. regulatory markets
- Concerns that the middle mile network may sit unused if ISPs do not enter an unprofitable market
- Lack of understanding about impact of federal and state policies on local broadband availability

### **EDUCATION & TRAINING NEEDS**

- Broadband ISPs, including contract negotiation
- Broadband connectivity and deployment
- Internal network design and management
- Broadband applications, use, planning, and evaluation
- What a middle mile network is and how it operates

### **UPGRADING PHYSICAL FACILITIES**

- Facilities issues may inhibit broadband deployment, such as old buildings that are difficult to renovate and have inadequate electric grids and outlets
- Space is limited for new workstations to accommodate heavy computer use
- Local resources are not available now (and unlikely in the near future) to address these issues

## Possible Responses

- Implement strategies to provide Florida anchor institutions with **EDUCATIONAL OPPORTUNITIES** on various broadband-related topics & issues
- Provide **ONE-ON-ONE** aid to anchor institutions about how best to obtain, negotiate for, deploy, administer, and evaluate the use of broadband
- Offer specific, written, and individualized **PROCEDURES AND GUIDELINES** on how institutions can upgrade their broadband and manage their networks
- Develop step-by-step procedures and tools for using broadband to **PROMOTE LOCAL ECONOMIC DEVELOPMENT**
- Identify methods for anchor institutions to develop **STRATEGIC AND PERHAPS COLLABORATIVE PLANS** to leverage and sustain broadband

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## Selected Diagnostics Findings

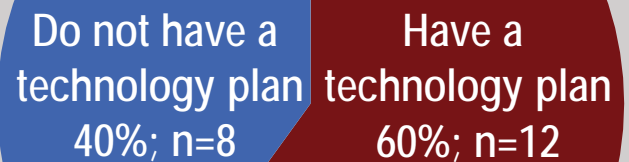
In support of the NFBA and FRBA BTOP-funded middle mile projects, the study team at the Information Institute conducted onsite broadband and network diagnostics at select anchor institution sites to better understand the diverse needs and issues of the anchor institutions throughout the NFBA and FRBA service areas.

### Institutions with “Dedicated IT Staff”

**NOTE:** “dedicated IT staff” refers to staff members who work solely in that facility, as opposed to IT staff members shared with other institutions or contracts with IT consultants.



### Institutions with Technology Plans



**NOTE:** Having an IT plan does not indicate the quality of the plan; quality differs across anchors and many existing IT plans were written to meet E-Rate requirements, rather than plan for the anchor’s IT needs.

The following summaries of onsite visits to a small rural public library, a town, and a rural health department in Florida reveal a number of issues facing Floridians in small rural communities. While specific situational factors contribute to the visited institutions’ ability to utilize broadband, three key needs of *education*, *training*, and *planning* are identified as universal for any institution to successfully adopt and utilize broadband connections. These needs relate to a general lack of awareness about the applications of broadband connections. All three institutions must deal with significant budget constraints and any change in their network or broadband capacity would require an abundance of justification.

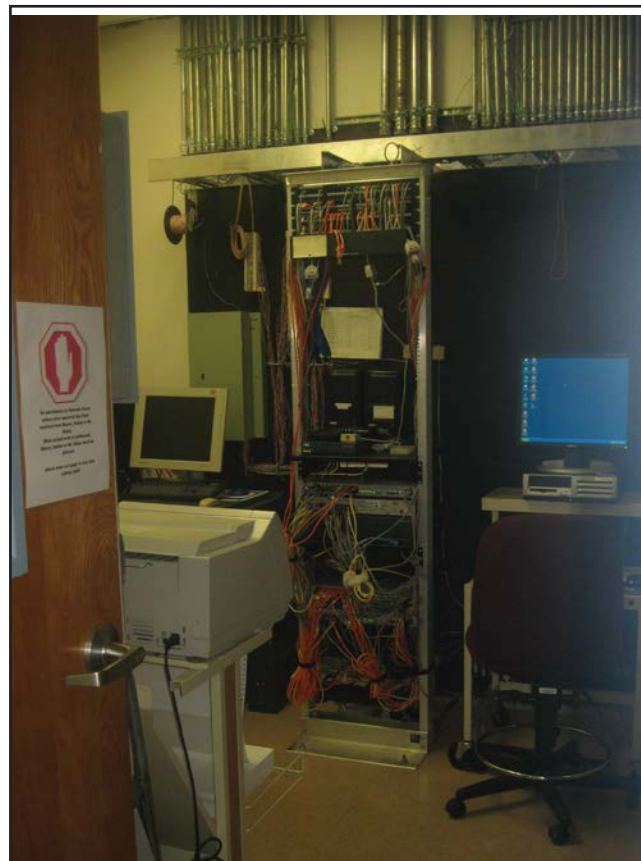
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## Diagnostic at a Small Rural Public Library

The Library serves a town of about 8,000 residents and is the network center of a three-county regional library system. The situation at this library is one of the better situations of all institutions that the assessment team visited because the Library has two dedicated and competent IT staff members who have developed a technology plan and designed a system that enables other staff to engage with and utilize technology. However, there are a number of issues which might deter the Library from changing or upgrading its broadband connection.

The Library's ability to utilize its current technology and Internet connection to full efficiency is entirely due to the competent and dedicated IT staff. However, staff members face limited ISP choices, restricted funding, and administrative uncertainties. Most of the network equipment is reaching the 10-year mark, while the newest computers are three years old.

Once again, the major factors in the Library's adoption and utilization of broadband are not necessarily the availability or quality of the network grid. Only if the new director is supportive of the IT staff and understands the applications of broadband connection will connections speeds and technology issues receive significant attention. Even with competent IT staff, general lack of awareness of broadband applications can deter upgrading of broadband connections.



### Issues

- The counties that the regional system covers do not have their own technology personnel, so each library is left on its own to provide its own technology support.
- The Library's connection speeds are maxed out, and even if there were additional resources to purchase higher connection speeds, no ISPs could meet the need.
- The technology plan that the IT staff developed expires this year and writing a new plan is on hold until the Library hires a new director.
- Uncertainties about the new director's attitude toward technology and the level of funding available to the Library discourage any real long-range planning.
- Receiving the E-Rate discount is critical for the Library to afford its Internet connection.
- Any ISP switch would have to be in accordance with receiving the E-Rate discount or the Library simply could not afford it.
- The Library provides the only free Internet access in the region, and there are patrons who come in every day simply to use the Internet for job searching, applying for and receiving assistance from government programs, applying for educational opportunities, and recreational technology use.
- Without the Internet, the Library could not communicate with the other branches and would be unable to provide core services to the public.
- Most of the equipment the Library purchases are secondhand from other local and state government agencies and already are aged considerably.

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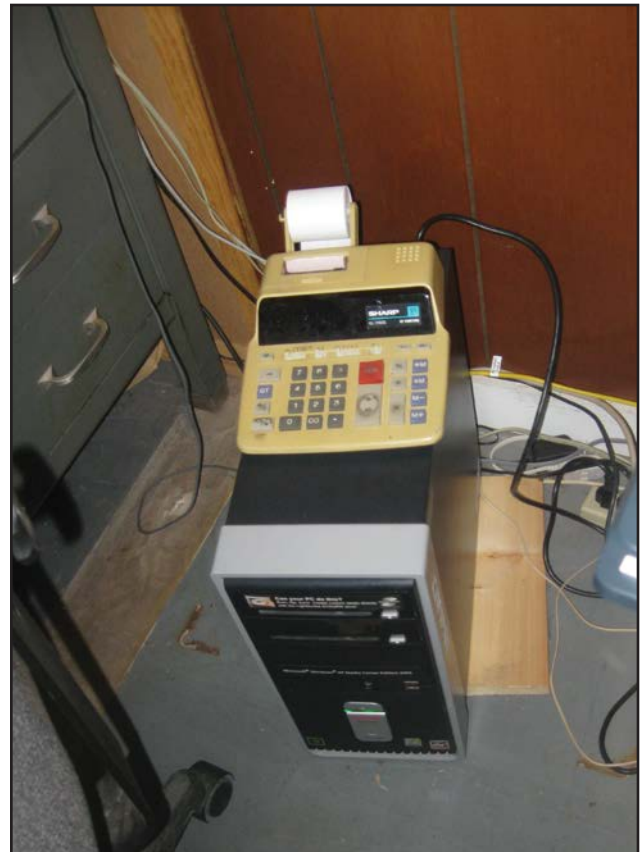


## Diagnostic at a Small Rural Town

The Town has roughly 150-200 people, one public building serving as community center and Town Hall, and two fulltime town employees (the Town Clerk and Mayor), who struggle to provide adequate services to residents. The network consists of two old computers, and Town technology goals are to establish a public access workstation in the Town Hall and even a municipal wireless connection that could provide the Town with much needed income and the residents with more affordable Internet access. Many residents do not view the Internet as something worth purchasing or using and therefore, do not own a computer, have any computer skills, or have access to the Internet.

The major issue facing this small rural Florida town is that both the town leaders and residents do not have the necessary experience or knowledge to utilize IT in new ways that increase the efficiency of town services and/or promote economic development. They know technology can improve government services and the quality of life, but no one knows where to start, where to go, or how to get there – and there are no extra resources to support such efforts.

Faster Internet connections and/or access to high speed broadband are not going to solve broadband issues for the people in this town. There will need to be long-term planning, education, and developmental processes put into place for this town to successfully adopt and use broadband. This will require external assistance and advice with hands-on work. Using the broadband access for local economic development is also problematic as it is unclear what economic development is possible given a range of socio-demographic and economic conditions that exist in the area. *Onsite information technology training and utilization programs, as well as developmental planning, are viable solutions to this small rural Florida town's technology issues.*



### Issues

- There is no one in the Town with the technical expertise to improve the Town's current technology or provide planning for future technology needs.
- While the Town Clerk and Mayor express a desire for a public workstation and municipal wireless network, they do not know where to begin or to whom talk about the planning process.
- Any kind of technology training will require travel to another city, which is an expense the Town cannot afford.
- The real criterion for a "better" Internet connection is cheaper, not necessarily faster, as there is no concept that newer technologies might require more bandwidth.
- The residents do not understand the uses of, or perceive a need for, improved technology and/or Internet access and they would not support any additional Town fees to cover new expenses or initial installation costs.
- The 40-year-old Town Hall is ill-equipped to handle information technology and not very secure for housing expensive equipment.

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## Diagnostic at a Rural Health Department

The Rural Health Department's ability to engage in new medical technologies like telemedicine and to participate in programs like health information exchanges (HIEs) depends on Internet service provision *and* addressing the barriers that currently inhibit the use of technology.

There are many components to the issues faced by the Rural Health Department that are simply unknown, largely stemming from staff members' unfamiliarity with technology and the disconnect from decision-making over technology plans. Currently, the Rural Health Department lacks the capability to participate in HIEs, utilize telemedicine, or even engage in video conferencing. This is not because they lack sufficient bandwidth; there just is no one at the Rural Health Department experienced enough to provide any kind of technology leadership.

*Thorough technology education, training, and planning for staff members would address many of the issues currently impeding the adoption of new technology and utilization of existing technology.*



### Issues

- Department staff do not understand state and federal policies or state procedures to request a better connection.
- The staff do not know where the Internet connection actually originates.
- There is no onsite technical assistance for helping to use unfamiliar equipment.
- No IT or broadband planning occurs at the Rural Health Department.
- Department staff cannot develop an institution-based technology plan due to state policy and lack of staff with technical expertise.
- Any changes, no matter how minor, must be approved by state officials, meaning that the staff at the Rural Health Department do not control or know when software updates occur.
- Participating in something like an HIE is not an option because staff simply have no idea what their hardware or software needs would be – for now or for the future.
- Broadband needs are unknown as there is no onsite decision making about Internet services; rather, “what we get through the state contract is what we get.”

To learn more about this research project, see the project websites at: <http://nfba.ii.fsu.edu> and <http://frba.ii.fsu.edu>, or selected publications:

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