FLORIDA RURAL BROADBAND ALLIANCE (FRBA) FLORIDA RURAL MIDDLE MILE NETWORKS – NORTHWEST AND SOUTH CENTRAL REGIONS PROJECT: BROADBAND NEEDS ASSESSMENT, DIAGNOSTICS, AND BENCHMARKING OF SELECTED ANCHOR INSTITUTIONS

SECOND INTERIM REPORT OF PROJECT ACTIVITIES – DRAFT

(January 1, 2011 – July 31, 2011)

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FRBA FLORIDA RURAL MIDDLE MILE NETWORKS – NORTHWEST AND SOUTH CENTRAL REGIONS PROJECT: BROADBAND NEEDS ASSESSMENT, DIAGNOSTICS, AND BENCHMARKING OF SELECTED ANCHOR INSTITUTIONS: SECOND INTERIM REPORT OF PROJECT ACTIVITIES – DRAFT

The Information Use Management and Policy Institute (Information Institute) at Florida State University has been conducting a number of activities in fulfillment of its award from the Florida Rural Broadband Alliance (FRBA) to conduct work in support of its $23 million Rural Middle Mile Networks project between January 1, 2011 and July 31, 2011. These activities are needs assessment, benchmarking, and onsite diagnostics at selected anchor institutions in the FRBA service area: the 8-county Northwest Rural Areas of Critical Economic Concern (RACEC),[1] the 6-county South Central RACEC, and the City of Immokalee (Collier County). This second interim report provides a summary of project activities during this project period (January 1, 2011 – July 31, 2011) and descriptions of planned activities for the remainder of the project (August 1, 2011 – December 31, 2011).

Task 1: Detailed Project Tasking

During the first phase of the study, members of the study team detailed project tasking and performed other organizational activities, all in consultation with the FRBA project liaison at Government Services Group.[2] This task included organizational activities in preparation for the beginning of the data collection for the needs assessment phases of the project. Task 1 activities and status were reported in the First Interim Report.[3]

Task 2: Data Collection

Data collection activities included conducting a needs assessment and benchmarking survey, onsite diagnostics collection, and interviews and/or focus groups that followed up on the survey and collected data on situational factors and issues that impact anchor institutions' awareness of and potential deployment of broadband networks. Key activities and status update for Task 2 are delineated in Table 1 (See next page).

The anchor institution broadband survey was mailed January 28, 2011 to the 323 anchor institutions identified in the FRBA service area. Additional surveys were sent to rural county health departments, based on findings from the concurrently running needs assessment for the

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[1] Since the inception of the FRBA project, Wakulla County has been added to the Northwest RACEC; however, Wakulla County is served by the North Florida Broadband Authority middle mile project and therefore, is not included in this study.

[2] Throughout Task 1 and most of Task 2, the Information Institute worked with liaisons at Government Services Group (Marguerite McCauley and Denise Collins). The Information Institute now works with a liaison from Opportunity Florida (Rick Marcum)

[3] McClure, C. R., Mandel, L. H., & Gibson, A. N. (2010). *Florida Rural Broadband Alliance (FRBA) Florida Rural Middle Mile Networks – Northwest and South Central Regions Project: Broadband needs assessment, diagnostics, and benchmarking of selected anchor institutions: First interim report of project activities*. Tallahassee, FL: Information Use Management and Policy Institute, College of Communication and Information, The Florida State University. Available at: http://ii.fsu.edu/content/view/full/45135

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North Florida Broadband Authority (NFBA).[4] Ultimately, 77 surveys were returned and will be analyzed during Task 3 (see below for more information on data analysis plans). More detail on the survey methodology is in Appendix A.

The project team conducted five focus groups and one interview to gather qualitative data that provides more detail and insights into anchor institution broadband needs, barriers, and enablers. Five focus groups were conducted with representatives of various anchor institutions in a 3-county area (to obtain representation from all 14 counties in the FRBA service area, plus the City of Immokalee). In April 2011, the project team also conducted an interview with representatives from the Department of Management Services (DMS) to gather information about county health department broadband deployment. More detail on the focus group and interview methodology is in Appendix B.

Subsequent to survey and focus group data collection, the project team began conducting onsite diagnostics in select anchor institutions throughout the FRBA service area. Ultimately, 19 diagnostic sessions were conducted, representing school districts, workforce boards, city and county governments, county health departments, community colleges, public libraries, law enforcement agencies, emergency management agencies, hospitals, and rural health clinics. More detail on the onsite diagnostics methodology is in Appendix C.

Table 1: Key Activities, Status, and Time Line to Completion for Task 2

ACTIVITY	STATUS UPDATE	TIMELINE
1. Conduct survey of anchor institutions – - Mail survey packet (including cover letter, informed consent form, and a paper version of the survey) to selected anchor institutions; - Track survey completions; and - Follow up with survey recipients by phone and/or email to encourage and aid in survey completion.	Task complete	January 1, 2011 – July 31, 2011
2. Conduct interviews and/or focus groups with representatives of anchor institutions in each county.	Task complete	February 1, 2011 – May 31, 2011
3. Conduct onsite diagnostics analyses at selected volunteer institutions.	Task complete	March 1, 2011 – July 31, 2011
4. Deliver second interim report that details completed project activities.	Task complete	July 31, 2011

Task 3: Data Analysis

The various data collected in Task 2 will be analyzed, tabulated, and verified using descriptive statistics, GIS mapping methodologies, and content analysis of primary themes and issues. Key findings and specific recommendations arising from this analysis will be reported in Task 4 (below). Key activities and a tentative time line for Task 3 are delineated in Table 2. Note that this timeline has been updated to reflect the extension of Task 2 to July 31, 2011. Also, the project team has determined from preliminary findings that FRBA constituents strongly desire and need education regarding broadband in general, what it is used for, and why it is

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[4] http://nfba.ii.fsu.edu
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important. Therefore, the Information Institute has added an activity to develop 2-4 online, self-paced instructional modules. This will not add any additional cost or time to the project, so Task 3 begins August 1, 2011 and ends October 31, 2011.

Table 2: Key Activities, Status, and Time Line to Completion for Task 3

ACTIVITY	TIMELINE
1. Analyze, tabulate, and verify survey data – • Use descriptive statistics to analyze survey responses; • Describe the existing and future broadband uses and applications of the region's anchor institutions; • Describe the existing bandwidth being purchased at the "front door" and its availability at the workstation-level for the anchor institutions; • Determine the current cost for the bandwidth being purchased by anchor institutions; • Identify the vendor(s) currently supplying the existing bandwidth for anchor institutions; • Identify situational factors and issues that impact whether anchor institutions decide to obtain or increase broadband capacity; • Obtain baseline data related to broadband connectivity and use that can be used to justify and support additional broadband funding requests for the region; and • Use GIS methodologies to map metrics such as anchor institution broadband costs and connections speeds.	August 1, 2011 – September 30, 2011
2. Analyze diagnostics – • Describe the existing broadband networks currently deployed in selected anchor institutions; • Identify situational factors and issues that impact how selected anchor institutions deploy their broadband networks; and • Determine ways that the region's anchor institutions can improve their network deployments and use of broadband.	August 1, 2011 – September 30, 2011
3. Analyze interview and focus group data – • Identify situational factors and issues that impact whether anchor institutions decide to obtain or increase broadband capacity; and • Describe factors that affect anchor institutions' capacity to use broadband effectively.	August 1, 2011 – September 30, 2011
4. Develop 2-4 self-paced, online instructional modules regarding broadband and its importance – • Based on findings from activities 1-3, determine topics of the modules; • Develop the modules; • Pre-test the modules; • Modify modules (if necessary) based on feedback from pre-test; and • Roll out modules to FRBA anchor institutions.	October 1 – 31, 2011
5. Deliver interim report that details completed project activities.	October 31, 2011

These activities will be conducted to address Task 3 and outcomes will be reported in the third interim report due October 31, 2011.

Task 4: Reporting

The study team will develop a final draft report that describes project activities, summarizes findings, identifies key issues, and makes specific recommendations for middle mile

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network deployment and strategies to better meet the broadband service needs of anchor institutions in the Northwest and South Central RACECs and the City of Immokalee. Key FRBA staff will provide input for the report, and a member of the study team will be available to make an oral presentation to the FRBA. Key activities and a tentative time line for Task 4 are delineated in Table 3.

Table 3: Key Activities and Timeline for Task 4

ACTIVITY	TIMELINE
1. Develop draft report – • Describe project activities; • Summarize findings and identify key issues; • Make specific recommendations for middle mile network deployment and strategies to better meet the anchor institution broadband service needs; and • Work with FRBA liaison to finalize report.	November 1, 2011 – December 31, 2011
2. Deliver final report and make oral presentations of findings to FRBA staff.	December 31, 2011

These activities will be conducted to address Task 4 and outcomes will be reported in the final report due December 31, 2011.

Summary

In the second project period (January 1, 2011 – July 31, 2011), the project team has collected data using three methods: anchor institution broadband survey, focus groups and interviews, and onsite diagnostics. The team is on track to begin the next phase of the project starting August 1, 2011. Key activities to be accomplished in this next phase are analyzing the data from each of the three methods, triangulating data into combined/comprehensive findings, and reporting results of data analysis and findings. The next Interim Report will be delivered to FRBA October 31, 2011.

<div align="center">**APPENDIX A: SURVEY METHODOLOGY**</div>

Population and Sample

First, the project team developed a comprehensive list of all anchor institutions within the Northwest and South Central RACECs and the City of Immokalee. Because the total population was 323 institutions, the project team decided to invite all institutions in the population to participate in the anchor institution broadband survey. That is, we did not select a sample.

A paper version of the survey was mailed to all 323 anchor institutions in the FRBA service area on January 28, 2011. Additional surveys were sent to 23 anchor institutions identified after the initial mailing, including rural county health departments. Also, one survey was returned from an institution to which the research team had not sent a packet. This brings the total to 347 anchor institutions surveyed for this project.

Survey Design

The project team determined that the most cost effective method of conducting the survey would be to use an online survey. After some deliberation, it was decided to use Survey Monkey Professional software for the survey. The survey was designed to obtain data that would meet the numerous goals of this project with as few questions as possible so as not to overburden the anchor institution staff completing the survey; two formats were created, a paper format and the online format.

To facilitate and encourage survey completion, the project team sent a mailing to all the anchors in the populations including a cover letter explaining the project and why their participation was needed for data collection and a paper copy of the survey so they could collect their responses before logging into the online survey. The cover letter and survey were provided to FRBA previously, but additional copies can be provided to the FRBA upon request. The paper version also was available to institutions unable to complete the survey online. The project team sent follow-up e-mails to institutions that had not completed the survey every 2-3 weeks, and completed a round of reminder phone calls in March 2011, until the survey officially "closed" on April 30, 2011 (the survey actually remained open throughout the focus group and onsite diagnostics data collection periods so additional anchor institutions that participated in focus groups and desired an onsite diagnostic could complete the survey). Responses were tracked to ensure that the project team did not send reminder e-mails to institutions that had completed the survey.

Survey Response Rate

Ultimately, 77 anchor institutions completed the survey, a 22.1% response rate. Respondents represented a wide variety of anchor institutions. Survey data will be analyzed using descriptive statistics and GIS mapping during Task 3, with findings reported in the Third Interim Report.

APPENDIX B: FOCUS GROUPS METHODOLOGY

The study team determined that the best way to leverage available resources was to conduct five focus groups, each covering a three-county area. Counties were combined into the area groupings based on geographic proximity in order to minimize travelling distances for participants; ultimately, this resulted in three focus groups servings three counties each, one focus group serving two counties, and one focus group serving three counties plus the City of Immokalee. In addition to determining these groupings, the study team identified one county in each of the multi-county areas as the optimal location to conduct the focus group, making the selection based on which county was located most centrally in the three-county area. Table 4 delineates the multi-county groupings, as well as the counties identified as most appropriate to host the focus groups.

Table 4: Three-County Areas

Group	Counties	Host County
1	DeSoto, Hardee, and Highlands	Highlands
2	Glades, Hendry, Okeechobee, and City of Immokalee	Glades
3	Gulf and Franklin	Gulf
4	Calhoun, Gadsden, and Liberty	Calhoun
5	Holmes, Jackson, and Washington	Washington

Sampling Frame

The largest possible sampling frame for this project consisted of a list of the anchor institutions in the Northwest and South Central Florida RACECs and the City of Immokalee that was developed for survey recruitment; this list was refined (i.e., updated) while the survey was in the field.

At the end of the online survey, respondents were asked for permission to be contacted for a follow-up interview. Those who responded negatively were removed from the sampling frame for the focus groups and other follow-up data collection activities; approximately 60% of total institutions declined a follow-up interview. Note that institutions in the sampling frame that did *not* complete the survey were retained in the focus group sampling frame in the hopes of recruiting some institutions to both attend the focus groups and complete the survey.

Sampling Methodology

The use of multi-county areas for focus group sampling necessitated stratifying the frame by the county groups. A stratified sample is one in which records in the total sample are distinguished by relevant characteristics to create strata, and the records are then sampled from within the strata.[5] The five multi-county areas were used as strata for this project, and samples were drawn from within each area.

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[5] Schutt, R. K. (2006). *Investigating the social world: The process and practice of research* (5th ed.). Thousand Oaks, CA: Sage.
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The sampling frame was relatively small, with a maximum of 83 records per multi-county group before those who had refused a follow-up interview were removed. It was essential that focus group participants be drawn from the counties within each multi-county area. Therefore, a purposive sampling methodology was employed. Purposive sampling is a non-probability sampling method in which records are selected because they represent an important characteristic.[6]

Participant Recruitment

The records in the sampling frame fell into three types:

- Institutions that responded to the survey and agreed to be contacted for follow-up interviews;
- Institutions that responded to the survey and did *not* agree to be contacted for follow-up interviews; and
- Institutions that had not yet responded to the survey.

Institutions that refused to be contacted for a follow-up interview were removed from the sampling frame for the focus groups.

Of the remaining institutions, the most likely to agree to participate in the focus groups were those that responded to the survey and agreed to be contacted for follow-up interviews. These institutions were contacted first, with a goal of recruiting approximately 6-10 participants per focus group. Subsequently, institutions that had not responded to the survey were contacted as well. Reasonable attempts were made to recruit at least one participant per county and to recruit participants from a mix of anchor institution types.

Focus Group Locations

The project team initially scheduled five focus groups to be held in Calhoun, Glades, Gulf, Highlands, and Washington Counties. All five focus groups occurred in May 2011.

Focus Group Protocol

The focus groups followed a set protocol and a predetermined list of topics, which was developed from the focus group protocol and topics employed for the NFBA needs assessment; that list of topics had been modified twice (after the first round of focus groups and in preparation for the Rural Health Partnership focus group). The protocol included housekeeping-type activities, such as having participants sign in and complete nameplates, an introduction that explained what the project is about and the purpose of the focus group, and general information about recording and other procedures. The topics included general background on the participants and their institutions, participants' impressions of their institutions' current broadband and technology, impacts of broadband on regional economic development, and

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[6] Schutt, R. K. (2006). *Investigating the social world: The process and practice of research* (5th Edition). Thousand Oaks, CA: Sage.

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factors that affect broadband access and use in their institutions, among others. Each topic included several probing questions to elicit additional information. More detail on the protocol and questions can be provided to the FRBA upon request.

Focus Group Participants

Focus group participants represented all 14 counties plus the City of Immokalee in the FRBA service area (Figure 1) and a variety of anchor institution types (Figure 2). Also, participants held myriad titles within their organizations (Figure 3).
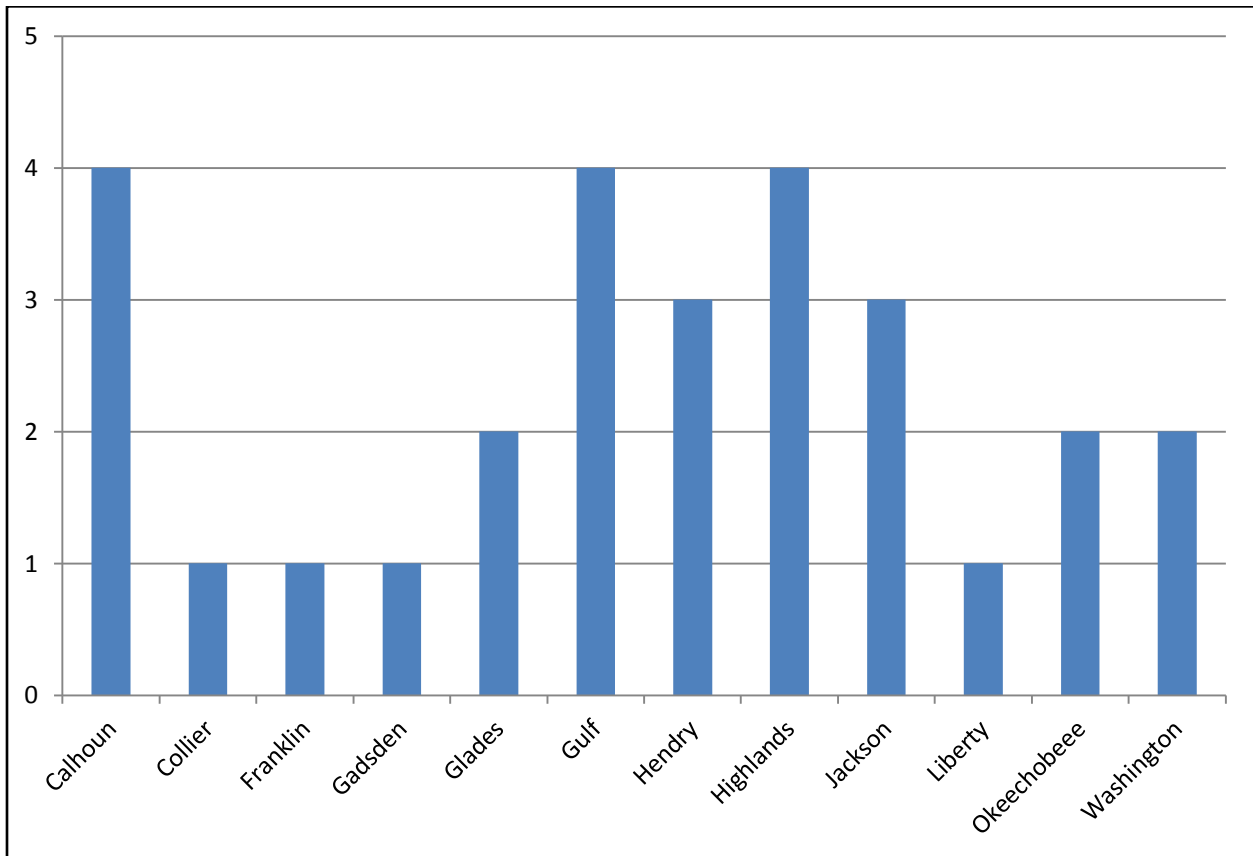

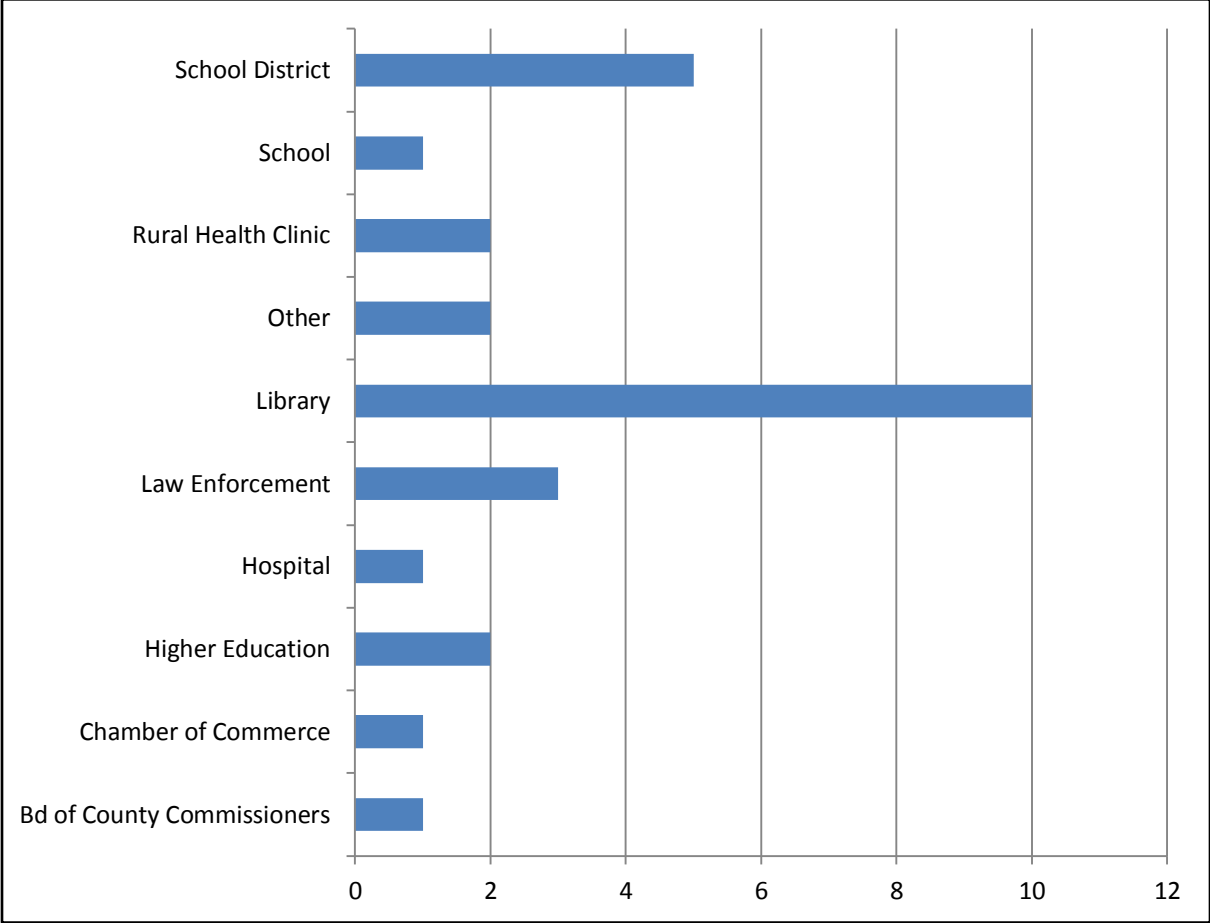Figure 1. Number of representatives from each county in FRBA focus groups
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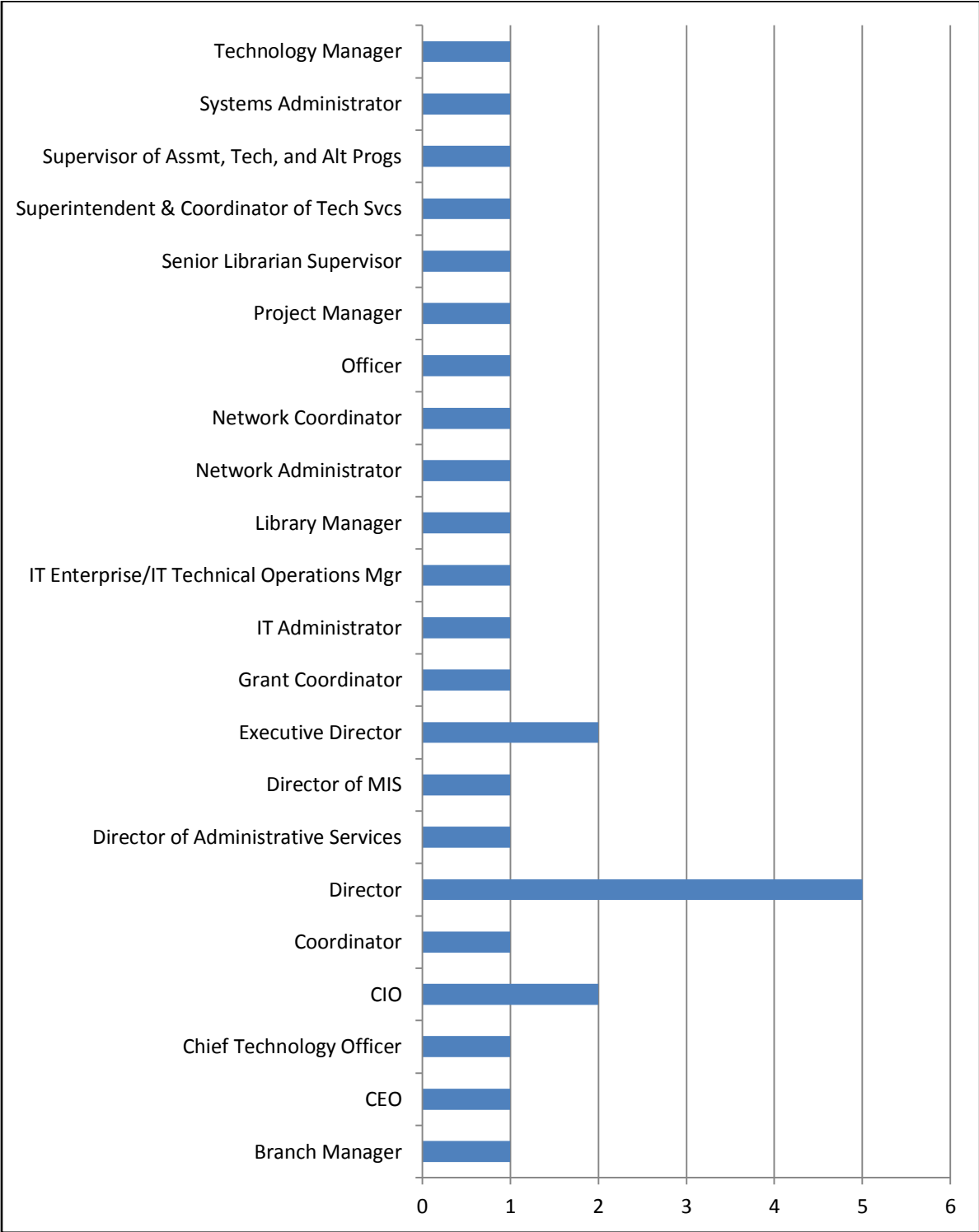Figure 2. Number of representatives from each anchor institution type in FRBA focus groups
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Figure 3. Job titles held by anchor institution representatives at FRBA focus groups

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APPENDIX C: ONSITE DIAGNOSTICS METHODOLOGY

The project team conducted onsite diagnostics and broadband connectivity assessments for select anchor institutions from the Northwest and South Central RACECs plus the City of Immokalee. The overall objectives of the onsite diagnostics were to accomplish the following:

- Describe the existing broadband networks currently deployed in the region's anchor institutions;
- Identify situational factors and issues that impact how anchor institutions deploy their broadband networks; and
- Determine ways that the region's anchor institutions can improve their network deployments to increase connection speeds at the workstation, and also improve network security and business continuity.

The methodology for conducting the onsite broadband benchmarking efforts was comprised of three phases.

The first phase included a process for generating a pool of potential anchor institutions that qualified for the onsite diagnostics. This list was not limited to those institutions that had taken the FRBA Anchor Institution Broadband Survey prior to the onsite visit.

The second phase included documents that the anchor institutions needed to prepare and have ready prior to the onsite visits. Prepared documents pertained to network information, such as, but not limited to, network peak usage, workstation bandwidth speed tests, and a manifest of network equipment detailing age of computers and number of wireless access points throughout the network. Phase two also provided the assessment team with lists of potential interview questions and a template of diagnostic procedures. The onsite assessment team also provided the anchor institution with a care package of helpful information, tips, and resources regarding improving broadband quality at the institution.

The last phase consisted of generating two kinds of reports. The first type of report was tailored to each anchor institution's onsite diagnostics results. This report was an overview of the findings for each individual anchor institution, and was provided to the individual institutions to fact check before Information Institute staff generated a final version of each report. The second kind of report will be an aggregate report of Northwest and South Central RACECs plus City of Immokalee anchor institutions with recommendations for addressing network issues and improving broadband quality; this will be compiled and written during Task 3 of the project.

In addition to the diagnostic team's report, anchor institutions have continuing access to the resources compiled on the FRBA project website (frba.ii.fsu.edu). Specifically, the project team created a section of the project website entitled Toolkit (frba.ii.fsu.edu/toolkit.html). Here, the project team provides a variety of self-help resources and recommendations to anchor institutions for improving their network, as well as information technology procedures and documentation. This section is updated frequently as the project team locates and prepares materials for inclusion in the Toolkit.

The specific onsite procedures and findings depended upon many situational factors, including but not limited to the following:

- Type and size of the anchor institution;
- Their information technology (IT) needs;
- Outside constraints such as security policies; and
- Organizational factors such as trained, available IT staff.

Additional detail on each phase and specific questions asked/protocol followed can be provided to the FRBA upon request.

Ultimately, the project team conducted 19 onsite diagnostics at the following types of anchor institutions:

- Public K-12 school (including school districts) (4);
- Regional workforce board (1);
- Board of county commissioners (1);
- Emergency Operations Center (1);
- Rural town/city (1);
- County health department (1);
- Community college (1);
- Rural health clinic (2);
- Rural hospital (1);
- Law enforcement agency (1); and
- Public library (5).

Each institution's broadband and network connections was unique to its individual situation; specific findings will be analyzed and described during Task 3. Findings will be limited to the information collected by the assessment team at the time of the onsite visit and what the anchor institution was willing and able to provide the assessment team both prior to and during the onsite diagnostics. These factors combined will determine the depth and breadth of the reports for each anchor institution and the aggregate report of all anchor institutions for the FRBA.