

HILTON HEAD ISLAND

TECHNOLOGY ACTION PLAN

PREPARED BY **CONNECT SOUTH CAROLINA**
AND THE
HILTON HEAD ISLAND INFORMATION TECHNOLOGY TASKFORCE



DECEMBER 16, 2014



ACCESS



ADOPTION



USE

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INTRODUCTION

The purpose of this report is to summarize the community's assessment of local broadband access, adoption, and use, as well as the best next steps for addressing any deficiencies or opportunities for improving the local technology ecosystem.

Background

Today, technology plays a pivotal role in how businesses operate, the type of service consumers expect, how institutions provide services, and where consumers choose to live, work, and play. The success of a community has also become dependent on how broadly and deeply the community adopts technology resources – this includes access to reliable high-speed networks, digital literacy of residents, and the use of online resources locally for business, government, and leisure. As noted in the National Broadband Plan, broadband Internet is “a foundation for economic growth, job creation, global competitiveness and a better way of life.”¹

Despite the growing dependence on technology, as of 2013, 30% of Americans did not have a high-speed connection at home.² Connected Nation's studies also show that 17 million families with children do not have broadband at home – and 7.6 million of these children live in low-income households. In 2014, Connected Nation also surveyed 4,206 businesses in 7 states. Based on this data, Connected Nation estimates that nearly 1.5 million businesses - 20% - in the United States do not utilize broadband technology today.³

Deploying broadband infrastructure, services, and application, as well as supporting the universal adoption and meaningful use of broadband, are challenging - but required - building blocks of a twenty-first century community. To assist communities, Connected Nation developed the Connected Community Engagement Program to help your community identify local technology assets, complete an assessment of local broadband access, adoption, and use, and develop an action plan for pursuing solutions.⁴

1 *Connecting America: The National Broadband Plan*, Federal Communications Commission, April 2010, <http://www.broadband.gov/download-plan/>

2 *Pew Research Internet Project – Broadband Technology Fact Sheet*

3 Connected Nation, *2014 Business Technology Assessment*, <http://www.connectednation.org/survey-results/business>

4 Connected Nation, parent company for Connect South Carolina, is a national non-profit 501(c)(3) organization that works in multiple states to engage community stakeholders, state leaders, and technology providers to develop and implement technology expansion programs with core competencies centered around the mission to improve digital inclusion for people and places previously underserved or overlooked.

Methodology

By actively participating in the Connected Community Engagement Program, the Hilton Head Island Information Technology Taskforce is boosting the community's capabilities in education, healthcare, and public safety, and stimulating economic growth and spurring job creation. The Hilton Head Island Information Technology Taskforce has collaborated with multiple community organizations and residents to:

1. Empower a community team leader (local champion) and create a community team composed of a diverse group of local residents from various sectors of the economy including education, government, healthcare, the private sector, and libraries.
2. Identify the community's technology assets, including local infrastructure, providers, facilities, websites, and innovative uses employed by institutions.
3. Complete the Connected Assessment, a measurement of the community's access, adoption, and use of broadband based on the recommendations of the National Broadband Plan.
4. Match gaps in the local broadband ecosystem to solutions and best practices being utilized by communities across the nation.
5. Pursue Connected Certification, a nationally recognized platform for spotlighting communities that excel in the access, adoption, and use of broadband.

Hilton Head Island Information Technology Taskforce Shea Farrar, Community Champion

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HILTON HEAD ISLAND COMMUNITY DETAIL

The Town of Hilton Head Island is located on a barrier island off of the most southeastern coast of Beaufort County, South Carolina. The island was developed, beginning with Sea Pines in the 1950s, with large, master-planned communities that had strict design requirements designed to emphasize the natural beauty of the island, such as its massive live oak trees. The island has over 12 miles of sandy dune and beachfront area and there are over forty Championship-level golf courses, sixty miles of biking and leisure trails and 300 tennis courts. All of these things, as well as the rich history and cultural activities, have helped to make the Island a very popular resort and retirement destination. Each year, there are an estimated 2.5 million visitors to the Island; however, the size of the Island's year-round population is only around 40,000 people. (According to 2013 U.S. Census data, Hilton Head Island had a population of 39,412, people and an 8.1% poverty rate, or 3,192 people having incomes below poverty level, which will be used as the basis for the calculations of this assessment.)

Community Technology Highlights

The following are highlights from many community groups and organizations referencing ways broadband is currently being utilized. This helped determine opportunities for future recommendations.

The Town of Hilton Head Island's website was recently redesigned to better facilitate online information and services, including interactive mapping for property information. Visitors to the Town's website can also e-subscribe to receive email notices for Town meetings, bid opportunities and other important information, such as press releases and news updates.

The Town of Hilton Head Island implemented new permitting software this year to enable online submittal, review, and issuance of many Town permits. This saves costs for applicants and the Town while speeding up application review, access to public records, and is better integrated with Town business license information. Select permits can be issued the same day and over 40 other applicators can be submitted, reviewed, and approved online.

Town of Hilton Head Island Inspectors utilize iPads to issue permits, approvals, and violations immediately on-site.

The Town of Hilton Head Island is working to create smartphone applications to provide information on beach access locations and to assist with damage assessment following a disaster.

The Town of Hilton Head Island also coordinates with Beaufort County on emergency management and public safety programs. Both the town and county have advanced mobile connectivity, which facilitates better coordination. For the Town, broadband has contributed to many achievements for Hilton Head Island Fire & Rescue, including international accreditation from the Commission on Fire Accreditation International, Inc. for the past three years and selection as one of three outstanding communities by the International Association of Fire Chiefs with their Heart Safe Community award in 2010. Applications include using mobile broadband to facilitate the transfer of data associated with geographic information and positioning systems for automatic vehicle location and for dispatching the closest unit to an emergency; transmission of mobile data including tests, images and assistance with preparations for patients needing additional care from responders to doctors in real-time for diagnosis by physicians and paramedics, while still at the scene of an accident; access gates and other secure areas are controlled using passwords sent to mobile devices via a secure network; a broadband enabled inventory control for medical supplies helps to reduce inventories and costs; fleet maintenance repair orders and requests are processed in the field. Video conferencing capabilities were added to training and conference rooms in Town facilities.

Broadband is also being used to enhance education in a number of ways. Beaufort County School District operates the county's public school system, including those on the Island. The district has provided fiber connections to all schools county-wide and is currently implementing Connect 2 Learn, a wireless tablet program in grades 3-12, to provide each student with a wireless device. Local providers and families are being worked with to assess any access issues.

The school district also provides programs and supports other efforts for digital literacy in the community for students, as well as parents. A new smartphone app is available that improves access to school calendars, news digests, menus, and social media (Facebook, Twitter, and YouTube) that connects parents and students to a variety of online resources and provides other information on class grades and bus routes, as well as access to online registration and bill payment systems. This also allows the delivery of emergency notifications to parents and students.

Other organizations, such as the Boys and Girls Club, Neighborhood Outreach Connection, and Hilton Head Island Computer Club and Literacy Center also provide support for technology and education initiatives in the community; the Boys and Girls Club of the Lowcountry has

dedicated technology staff for an advanced technology center that provides a wide range of learning opportunities through different technologies for children to explore, such as digital music composition and 3D printing.

Beaufort County Public Library on the Island also offers public computer access with support for programs that teach digital literacy and help improve job skills, as well as increase educational achievement.

Hilton Head Preparatory School developed a Digital Learning Center where students can complete graduation requirements through accredited online courses, which provides more scheduling flexibility and expands course opportunities.

The Chamber of Commerce has a Video Conferencing Center and "Tech Tuesdays" classes for business-oriented tech instruction.

Major resort hotels like Sonesta have added internal enhancements for cell phone coverage with expanded Wi-Fi access.

The Town of Hilton Head Island recently formed an Economic Development Corporation that has identified telecommunications as critical to the economic growth of the Island.

CONNECTED ASSESSMENT

The Connected assessment framework is broken into 3 areas: **ACCESS**, **ADOPTION**, and **USE**. Each area has a maximum of 40 points. To achieve Connected Certification, the community must have 32 points in each section and 100 points out of 120 points overall.

The **ACCESS** focus area checks to see whether the broadband and technology foundation exists for a community. The criteria within the **ACCESS** focus area endeavors to identify gaps that could affect a local community broadband ecosystem including: last and middle mile issues, cost issues, and competition issues. As noted in the National Broadband Plan, broadband **ACCESS** “is a foundation for economic growth, job creation, global competitiveness and a better way of life.”

Broadband **ADOPTION** is important for consumers, institutions, and communities alike to take the next step in fully utilizing broadband appropriately. The **ADOPTION** component of the Connected Assessment seeks to ensure the ability of all individuals to access and use broadband.

Broadband **USE** is the most important component of **ACCESS**, **ADOPTION**, and **USE** because it is where the value of broadband can finally be realized. However, without access to broadband and **ADOPTION** of broadband, meaningful **USE** of broadband wouldn't be possible. As defined by the National Broadband Plan (NBP), meaningful **USE** of broadband includes those areas of economic opportunity, education, government, and healthcare where values to individuals, organizations, and communities can be realized.

Analysis of Connected Assessment

The Community Technology Scorecard provides a summary of the community's Connected Assessment. The Connected Assessment's criteria are reflective of the recommendations made by the Federal Communications Commission's National Broadband Plan. Lower scores indicate weaknesses in the community's broadband ecosystem, but do not necessarily signify a lack of service.

- Hilton Head Island achieved a score of 114 points out of 120 for overall broadband and technology readiness which indicates that the community is exhibiting high success in basic technology access, adoption, and use and has surpassed the score of 100 required for Connected certification.
- The Island scored 34 out of a possible 40 points in broadband access primarily because of the limited availability of middle-mile service providers. Hilton Head Island overall broadband availability is generally consistent with the state average of 98.06%.
- Town of Hilton Head Island exceeded the 32 points in each focus area that are required for

certification and has qualified for full certification.

While the results indicate that the community meets the basic FCC broadband goals, additional investments in technology infrastructure, facilities and programs are needed to achieve the higher quality connectivity and broadband capabilities required for the Town's economic development goals. This technology plan will provide some insight and recommendations that will help the community continue to improve.



Community Technology Scorecard Community Champion: Shea Farrar Community Advisors: Leslie Callison and Lindsay Conrad				
FOCUS AREA	ASSESSMENT CRITERIA	DESCRIPTION	SCORE	MAXIMUM POSSIBLE SCORE
ACCESS	Broadband Availability	100% of homes have access to 3 Mbps	10	10
	Broadband Speeds	97% of households with access to less than 50 Mbps	5	5
	Broadband Competition	100% of households with access to more than 1 broadband provider	5	5
	Middle Mile Access	Availability of broadband at speeds of at least 50 Mbps down	4	10
	Mobile Broadband Availability	100% of households with access to mobile broadband	10	10
	ACCESS SCORE			34
ADOPTION	Digital Literacy	Program grads are greater than 10 per 1,000 residents over the past year	10	10
	Public Computer Centers	500 computer hours per 1,000 low income residents per week	10	10
	Broadband Awareness	Campaigns reach 100% of the community	10	10
	Vulnerable Population Focus	At least 5 groups	10	10
	ADOPTION SCORE			40
USE	Economic Opportunity	4 advanced, 3 basic uses	10	10
	Education	8 advanced, 2 basic uses	10	10
	Government	5 advanced, 2 basic uses	10	10
	Healthcare	4 advanced, 3 basic uses	10	10
	USE SCORE			40
COMMUNITY ASSESSMENT SCORE			114	120

Itemized Key Findings

The Hilton Head Island Information Technology Taskforce identified the following key findings (in addition to findings illustrated in the community scorecard) through its technology assessment:

ACCESS

- 7 last-mile broadband providers currently provide service on Hilton Head Island:
 - 100% of households have access to 3 Mbps.
 - 97% of the homes on Hilton Head Island have access to 50 Mbps service.
 - 100% of the households in Hilton Head Island have access to more than 1 provider.
- Availability of broadband middle mile fiber at speeds of at least 50 Mbps down.
- 100% of Hilton Head Island households have access to mobile broadband.

ADOPTION

- A minimum of 7 Digital Literacy Programs exist in the community resulting in 1,136 graduates over the past year.
- A minimum of 4 Public Computer Centers (PCC) with a total of 87 computers is open to the public.
- A minimum of 11 Broadband Awareness Campaigns are reaching 100% of the Town of Hilton Head Island.
- A minimum of 5 organizations are working with vulnerable populations.

USE

- At least 7 uses of broadband were identified in the area of economic opportunity including 4 advanced uses and 3 basic uses.
- At least 10 uses of broadband were identified in the area of education including 8 advanced uses and 2 basic uses.
- At least 7 uses of broadband were identified in the area of government including 5 advanced uses and 2 basic uses.
- At least 7 uses of broadband were identified in the area of healthcare including 4 advanced uses and 3 basic uses.

In addition to the items identified above, the Hilton Head Island Information Technology Taskforce identified the following technology resources in the community:

Technology Providers

- 7 broadband providers were identified in the Town of Hilton Head Island.

Technology Facilities

- 4 public computing centers.
- 25 wireless hotspots.
- 2 video conferencing facilities.

Community Websites

- 5 Business-related websites (excluding private businesses).
- 3 Education-related websites.
- 2 Government-related websites.
- 1 Healthcare-related website.
- 1 Library-related website.
- 2 Tourism-related websites.
- 1 Community-based-related website.

Community Priority Projects

The Connected Assessment has culminated in the outlining of projects designed to empower the community to accelerate broadband access, adoption, and use. Below are 6 priority projects, followed by a list of other action items.

1. Provide Improved Access to Broadband for Students.
2. Perform a Pilot Project for 1 Gig Service.
3. Develop Public Private Partnerships to Deploy Broadband Service.
4. Assist Providers with Building Necessary Wireless Infrastructure.
5. Quarterly Technology Forum for Economic Development.
6. Feature Cyber Education.

List of Other Action Items

Below is a list of other 4 action items proposed by the Hilton Head Island Information Technology Taskforce to accelerate broadband access, adoption, and use. Detailed descriptions of each solution proposed by Connect South Carolina can be found in the *Action Plan* section later in this report.

ACCESS

Broadband Availability

1. Identify and Populate Community Supply and Demand Matrix (Local Submission).
2. Recognize Technology Achievements in the Community (Local Submission).
3. Connect the Beach (Local Submission).

Broadband Speeds – No Action Items.

Broadband Competition – No Action Items.

Middle Mile Access – No Action Items.

Mobile Broadband Availability – No Action Items.

ADOPTION

Digital Literacy – No Action Items.

Public Computer Centers – No Action Items.

Broadband Awareness – No Action Items.

Vulnerable Population Focus – No Action Items.

USE

Economic Opportunity – No Action Items.

Education

4. Expand the Learning Environment Past the Boundaries of the School. (Local Submission).

Government – No Action Items.

Healthcare – No Action Items.



DETAILED FINDINGS

Community Technology Developments on Hilton Head Island

During the assessment process, the community team identified past and present projects or efforts that are helping to enhance technology on Hilton Head Island.

Issues related to broadband access on Hilton Head Island first arose three years ago, but at the time, it was primarily related to the quality of cell phone coverage. A growing number of complaints from both residents and visitors related to dropped calls and the lack of indoor coverage, coupled with the increasing dependence on wireless service rather than landlines, resulted in the Island's Town Council identifying the quality of telecommunications services as a top priority for the Town in 2011. At that time, to determine what action steps were needed, a taskforce of community members with expertise in telecommunications was formed to examine the Island's telecommunications issues and make recommendations to improve service. This group and the Town examined the technologies involved, met with the wireless and wireline carriers, cell tower companies and other involved parties for their input and independently tested the quality of service for the Island's two primary carriers, AT&T and Verizon, by executing over 20,000 coverage tests using the RootMetrics smartphone app. This resulted in a better understanding of the challenges with these services on the Island and also helped form the foundation for cooperative working relationships with these companies and community leaders that have facilitated great progress in this effort.

At that time, the carriers and tower companies reported difficulty with locating new infrastructure improvements on the Island due to the developed nature of the Island and the permitting requirements for installing new cell towers, due largely to increased setback requirements and zoning changes. As a result, the Town made expedited changes to site requirements and significantly reduced the time for obtaining a permit. The Town began to work proactively with carriers to identify and evaluate potential locations for new infrastructure. The taskforce worked to raise awareness of the issue and educate the community on the current status and necessary steps for improvements in cell service by addressing this issue with property owners associations, the Chamber of Commerce, and numerous other neighborhood and civic groups. Now many of the master planned communities have formed their own taskforces focused on facilitating the development of this infrastructure more easily. These efforts proved to be successful in increasing the confidence of wireless companies in their ability to successfully locate infrastructure on the Island in a timely manner. Increased investments are now being facilitated at a faster rate. Since that time, over a dozen

new or upgraded wireless sites have been installed and major network upgrades have been made by AT&T and Verizon alone that total over \$10 million dollars and include support for Island-wide LTE coverage.

In addition to the efforts being made to improve wireless service on the Island, progress was also being made toward economic development efforts aimed at diversifying the Island’s economy and improving business potential on the Island. As a result, the awareness of the need for high speed fiber connectivity in both offices and for working from home has continued to increase. Connect South Carolina’s Connected Community program presented the opportunity for the community to expand the focus from wireless to wired in a way that will create a more comprehensive picture of the Island’s connectivity.

Town of Hilton Head Island Assessment Findings

Today, residents in the Town of Hilton Head Island (or sections of the community) are served by 7 providers. Currently, broadband is defined as Internet service with advertised speeds of at least 768 Kbps downstream and 200 Kbps upstream. According to Connect South Carolina’s latest broadband mapping update, the following providers have a service footprint in the Town of Hilton Head Island Community:

Broadband Providers	Website	Technology Type
Hargray Telephone	www.hargray.com	Cable, DSL, Fiber
Time Warner Cable	www.gettimewarnercable.com	Cable
AT&T Mobility LLC	att.com	Mobile Wireless
Cricket Communications, Inc.	https://www.cricketwireless.com/cell-phone-plans	Mobile Wireless
Sprint	www.sprint.com	Mobile Wireless
T-Mobile	www.t-mobile.com	Mobile Wireless
Verizon Wireless	www.verizonwireless.com	Mobile Broadband

Below is a list of local technology companies that are providing technical services or distributing/selling technical resources.

Company Name	Website	Provider Type
Riedel Computer Services, Inc.	www.riedelcomputers.com	Computer Dealer
HHI Computer Guys	www.hhicomputerguys.com	Computer Services
Infinity, Inc.	www.savannahnetworking.com	Computer Services
Lowcountry Computer Guy, LLC	www.lowcountrycomputerguy.com	Computer Services

PCSAVED.COM	www.pcsaved.com	Computer Services
Schooley Mitchell Telecom Consultants	www.schooleymitchell.com	Telecom Consulting
Urnge	www.urngecom	Web Development
Sourcecode, LLC	www.sourcecode-llc.com	Software Development
7com7 Marketing and Media	www.bloftoncom.com	Web Development
Progressive Technology	www.progressivetechology.com	Computer Services
Connexus	www.connexususa.com	Computer System Design/Consulting
Inspired Tech Solutions	www.itshhi.com	Computer System Design/Consulting
Ask Dr. John	http://askdrjohn.com	Telecom Consulting

Below is a list of organizations that are making technological resources available to the community. These include organizations that provide videoconferencing, public computing, and wireless hotspots.

Organization Name	Website	Resource Type
Boys and Girls Club of the Lowcountry	http://www.bgchhi.org	Public Computer Facility
Beaufort County Public Library HHI	http://www.beaufortcountylibrary.org	Public Computer Facility
USCB	http://www.uscb.edu/about_us/index.php	Public Computer Facility
Amigo's Cafe	http://www.amigoshhi.com/	Wireless Hotspot
Arby's	http://arbys.com	Wireless Hotspot
Atlanta Bread Company	http://atlantabread.com/	Wireless Hotspot
Barnes and Noble	http://store-locator.barnesandnoble.com/store/2914	Wireless Hotspot
Callahan's	http://callahanssportsbar.com/index.html	Wireless Hotspot
Coastal Discovery Museum	http://www.coastaldiscovery.org/	Wireless Hotspot
Coligny Beach Park	http://www.hiltonheadislandsc.gov/	Wireless Hotspot
Compass Rose Park	http://www.hiltonheadislandsc.gov	Wireless Hotspot
The Dry Dock	http://www.urbanspoon.com/r/164/1540587/restaurant/DryDock-Seafood-Grill-Spirits-Hilton-Head-Island	Wireless Hotspot
Harbour Town Yacht Basin	https://www.seapines.com/resort_activities/harbour_town/harbour-town-yacht-basin.aspx	Wireless Hotspot
Hargray Retail Store	www.hargray.com	Wireless Hotspot
Hilton Head Diner	http://www.hiltonheaddiner.com/	Wireless Hotspot

Main Street Cafe	http://www.hiltonheadcafe.com/	Wireless Hotspot
Mangiamao's	http://www.hhipizza.com/	Wireless Hotspot
McDonald's	http://www.mcdonalds.com	Wireless Hotspot
Panera Bread Company	https://www.panerabread.com/en-us/home.html	Wireless Hotspot
Planet Smoothie	http://planetsmoothie.com/	Wireless Hotspot
Reilly's Grill and Bar	http://www.reilleyshiltonhead.com/	Wireless Hotspot
Shelter Cove Marina	http://www.palmettodunes.com/shelter-cove-harbour.php	Wireless Hotspot
Shelter Cove Towne Centre	http://sheltercovetownecentre.com/asp/index.asp	Wireless Hotspot
Starbucks	http://www.starbucks.com/	Wireless Hotspot
Shelter Cove Park	http://www.hiltonheadislandsc.gov	Wireless Hotspot
Town of Hilton Head Island Town Hall	http://www.hiltonheadislandsc.gov	Wireless Hotspot
McDonald's	http://www.mcdonalds.com	Wireless Hotspot

Below is a list of community websites (sorted by category) designed to share and promote local resources.

Organization Name	Website	Website Category
Hilton Head Monthly	www.hiltonheadmonthly.com	Business
Island Packet	www.islandpacket.com	Business
SC LowCountry SCORE	www.scorehiltonhead.com	Business
SC Technology Alliance	www.sctech.org	Business
South Carolina Department of Commerce	http://scommerces.com/sc-business-network/resource-finder	Business
Heritage Library	www.heritagelib.org	Community-based
Community Foundation of the Lowcountry	www.cf-lowcountry.org	Community-based
Beaufort County School District	www.beaufort.k12.sc.us	Education
Technical College of the Lowcountry	www.tcl.edu	Education
University of South Carolina Beaufort	www.uscb.edu	Education
Beaufort County	www.bcgov.net	Government
Town of Hilton Head Island	www.hiltonheadislandsc.gov	Government
Hilton Head Hospital	www.hiltonheadregional.com	Healthcare
Fork and Fun	www.forkandfun.com	Tourism
Hilton Head Island - Bluffton Chamber of Commerce	www.hiltonheadchamber.org	Tourism

Connected Assessment Analysis



Access Score Explanation

Broadband Availability (10 out of 10 Points Possible) – is measured by analyzing provider availability of 3 Mbps broadband service gathered by Connected Nation’s broadband mapping program. In communities that may have broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

- **According to the April 2014 data collected by Connect South Carolina, 100% of the Town of Hilton Head Island residents had access to broadband speeds of 3 Mbps or greater.**

Broadband Speeds (5 out of 5 Points Possible) – is measured by analyzing the speed tiers available within a community. Connected Nation will analyze broadband data submitted through its broadband mapping program. Specifically, Connected Nation will break down the coverage by the highest speed tier with at least 75% of households covered. In communities that may have broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

- **According to the April 2014 data collected by Connect South Carolina, 97% of the Town of Hilton Head Island residents had access to broadband speeds of 50 Mbps.**

Broadband Competition (5 out of 5 Points Possible) – is measured by analyzing the number of broadband providers available in a particular community and the percentage of that community’s residents with more than one broadband provider available. Connected Nation performed this analysis by reviewing the data collected through the broadband mapping program. In communities that may have broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

- **According to the April 2014 data collected by Connect South Carolina, 100% of the Town of Hilton Head Island residents had access to more than one broadband provider.**

Middle Mile Access (4 out of 10 Points Possible) – is measured based on a community’s availability to fiber. Three aspects of availability exist: proximity to middle mile points of presence (POPs), number of POPs available, and available bandwidth. Data was collected by the community in coordination with Connected Nation.

- **Town of Hilton Head Island has availability of broadband at 50 Mbps down.**

Mobile Broadband Availability (10 out of 10 Points Possible) – is measured by analyzing provider availability of mobile broadband service gathered by Connected Nation’s broadband mapping program. In communities that may have mobile broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

- **According to the April 2014 data collected by Connect South Carolina, 100% of the Town of Hilton Head Island residents had access to mobile broadband service.**



Adoption Score Explanation

Digital Literacy (10 out of 10 Points Possible) – is measured by first identifying all digital literacy programs in the community. Once the programs are determined, a calculation of program graduates will be made on a per capita basis. A digital literacy program includes any digital literacy course offered for free or at very low cost through a library, seniors center, community college, K-12 school, or other group serving the local community. A graduate is a person who has completed the curriculum offered by any organization within the community. The duration of individual courses may vary. A listing of identified digital literacy offerings is below.

Organization Name	Program Description	Number of Grads
Boys and Girls Club of the Lowcountry	Basic and Advanced computer literacy	200
Beaufort County Public Library	IPhone use	15
Share Senior Center/ Computer Clubs	Computer use applications and digital literacy	150
The Literacy Center	Computer assistance for online learning	84
University of South Carolina at Beaufort	Website design, IPhone and Microsoft Programs	237
Beaufort County School District	Website and portal training	320
Neighborhood Outreach Connection	Tutoring and access to education reinforcement	130
Total Graduates [2013-2014]		1,136

Public Computer Centers (10 out of 10 Points Possible) – is measured based on the number of hours computers are available each week per 1,000 low-income residents. Available computer hours is calculated by taking the overall number of computers multiplied by the number of hours open to a community during the course of the week. A listing of public computer centers available in the Town of Hilton Head is below.

Organization Name	Number of Open Hours per Week	Number of Computers	Available Computer Hours per Week
Boys and Girls Club of the Lowcountry	22.5	46	1,035
Beaufort County Public Library HHI	50	29	1,450
University of South Carolina at Beaufort	32	5	160
The Literacy Center	42	7	294

Broadband Awareness (10 out of 10 Points Possible) – is measured based on the percentage of the population reached. All community broadband awareness programs are first identified, and then each program’s community reach is compiled and combined with other campaigns. A listing of broadband awareness programs in the Town of Hilton Head Island is below.

Organization Name	Campaign Description	Community Reach
AT&T	Multimedia promotion	85%
Time Warner Cable	Multimedia promotion	85%
Hargray	Multimedia promotion	85%
T-Mobile	Multimedia promotion	85%
Sprint	Multimedia promotion	85%
Beaufort County Public Library	Fliers, newsletter, meetings to promoting online access to library resources	90%
Boys and Girls Club of the Lowcountry	Broadband awareness via web, newsletter, parent and school meetings	40-60%
Neighborhood Outreach Connection	Promotes online learning assistance	30%
Hospital Medical Service/Appointments	Smart phone check-in commercials, magazine ads, and newspaper	95%
Beaufort County	Traffic cameras online, Local Broadcast Channel	95%
Town of Hilton Head Island	Newsletters, fliers, email notifications for paying taxes, obtaining permits, requesting information, accessing documents and property information online	95%

Vulnerable Population Focus (10 out of 10 Points Possible) – A community tallies each program or ability within the community to encourage technology adoption among vulnerable groups. Methods of focusing on vulnerable groups may vary, but explicitly encourage technology use among vulnerable groups. Example opportunities include offering online GED classes, English as a Second Language (ESL) classes, video-based applications for the deaf, homework assistance for students, and job-finding assistance. Communities receive points for each group on which

they focus. Groups may vary by community, but include low-income households, minorities, seniors, children, etc. A listing of programs focusing on vulnerable populations in the Town of Hilton Head Island is below.

Organization Name	Program Description	Vulnerable Group
Beaufort County School District	Online Summer School	Under-achieving Youth
Beaufort County Adult Education	GED classes, ESL classes, computer training	English Second Language; Non-graduates
Boys and Girls Club of the Low Country	Technology education, video-based applications for students, homework assistance, basic finance/budgeting classes based applications for students, homework assistance, basic finance/budgeting classes	Youth; Low-income: English Second Language
Share Senior Center/ Computer Club	Basic and advanced computer literacy	Senior Citizens
SC Works	Job assistance	Unemployed



Use Score Explanation

Economic Opportunity (10 out of 10 Points Possible) – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within economic opportunity include: economic development, business development, tourism, and agriculture. Identified uses of broadband in the area of economic opportunity are listed below and identified as basic or advanced.

Application Provider	Description	Basic / Advanced
Tech Tuesdays	Business assistance with technology opportunities to grow businesses	Advanced
Real Estate Portal	Online search for real estate and business facilities in the Lowcountry	Basic
Small Business Assistance	Small Business Toolkit online	Advanced
SC Works	Virtual employment assistance and training	Advanced

Visitor Information	Local attractions online	Basic
Online Banking	Account access	Basic
ThinkOffice Hilton Head	Flexible office space rental to support teleworking	Advanced

Education (10 out of 10 Points Possible) – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within education include K-12, higher education, and libraries. Identified uses of broadband in the area of education are listed below and identified as basic or advanced.

Application Provider	Description	Basic/ Advanced
GED	Online GED testing and training	Advanced
Virtual Library	Online catalogue for County Library	Advanced
Digital Learning Academy	Accredited online learning program for middle and upper school students	Advanced
Instructional Technology Professional Development	Continued technology education for teachers	Basic
100% Broadband Access	All schools, classrooms, and libraries have broadband access	Basic
100% 12th grade digital literacy	Connect2Learn Mobile Device Program	Advanced
100% K-12 Post curriculum, homework and grades online	PowerSchool's Parent Portal, Edmodo, and Google Docs	Advanced
100% Schools have online parent portal	PowerSchool's ParentPortal, School Messenger and district, school, and teacher websites	Advanced
100% of students can participate in courses online	Virtual Summer School and high school credits	Advanced
100% access to STEM Program	Access to robotics, Lego league, AMES, and computer and engineering courses	Advanced

Government (10 out of 10 Points Possible) – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within government include general government, public safety, energy, and the environment. Identified uses of broadband in the area of government are listed below and identified as basic or advanced.

Application Provider	Description	Basic/ Advanced
Online Permitting	Submit and correspond online for permits	Advanced
Property Max	Property navigator online	Advanced
Online Food Sanitation Reports	Food sanitation reports	Basic

Emergency Alert Service	Emergency alerts via text or email	Advanced
Computer Aided Dispatch	Map data and fire apparatus location via automatic vehicle location	Advanced
Surveillance Cameras	Remote monitoring of facilities	Basic
Next Generation E-911	Enables dispatchers the ability to receive residents' smartphone photos and videos and then transmit those to first responders	Advanced

Healthcare (10 out of 10 Points Possible) – A community receives one point per basic use of broadband and two points per advanced use of broadband. Entities within healthcare can include, but are not limited to, hospitals, medical and dental clinics, health departments, nursing homes, assisted living facilities, and pharmacies. Identified uses of broadband in the area of healthcare are listed below and identified as basic or advanced.

Application Name	Description	Basic/ Advanced
Patient Medical Records	Secure access to patient medical records	Advanced
EMR System	Secure access to hospital's EMR system	Advanced
Patient Portal	Secure Patient Portal - Patient can retrieve their personal records to be shared with Primary Care Provider	Advanced
Hospital Website	Online hospital information	Basic
Document sharing	Secure document sharing with organizations, institutions, and physicians	Basic
Remote Medical Diagnosis	Acquisition and transmission of vital parameters	Advanced
Online Patient Resources	Enables locating doctors online	Basic

ACTION PLAN

Community Priority Projects

This exercise has culminated in the outlining of projects to allow the community to continue its recognized excellence in technology and broadband planning across the community. Below are 6 priority projects, each describing a project plan with suggested steps. This is followed by a complete list of all action items.

Provide Improved Access to Broadband for Students (Local Submission)

Support the deployment of broadband technology in the community, especially for students, by making access to broadband available at public computer centers at the times needed. For example, the public computer hours at the public library are expanded to accommodate broadband access for students to complete their lessons in the evening.

Goal:

Provide greater access to broadband to enable digital learning.

Benefits:

1. Provides broadband access to more computers with greater coverage.
2. Supports school-wide online education initiatives.
3. Enables access to e-books and other Internet content and services.

Action Items:

1. Target locations for public computer access to improve and better coordinate with user needs.
2. Research grants and other opportunities to make additional hours, locations or times available if needed.

Perform a Pilot Project for 1 Gig Service (Local Submission)

Establish pilot projects with service providers for gigabit Internet service to commercial and residential customers.

Goal:

Have gigabit Internet service to promote Hilton Head Island as a “Connected Island.”

Benefits:

1. Promotes faster than average broadband access to prospective and current businesses and residents.
2. Fast-tracks higher speed Internet access from local Internet service providers.

Action Items:

1. Work with providers to identify target projects and develop a trial business model for deployment of fiber to the home or business with a minimum of 1 Gig speeds.
2. Survey potential subscribers to determine level of participation.
3. Execute project and evaluate potential for expanding to larger area.

Develop Public Private Partnerships to Deploy Broadband Service

Public private partnerships take many forms, limited only by the imagination and legal framework in which the municipality operates. Some communities issue municipal bonds to fund construction of a network, which they lease to private carriers, with the lease payments covering the debt service. Others create nonprofit organizations to develop networks in collaboration with private carriers or provide seed investment to jumpstart construction of networks that the private sector is unable to cost justify on its own. A public private partnership should not be simply seen as a method of financing. The strength of these partnerships is that each party brings something important to the table the other does not have or cannot easily acquire. The community can offer infrastructure (publicly owned building rooftops, light poles, towers, and other vertical assets for mounting infrastructure) for the deployment of the system, as well as committed anchor tenants. Private sector partners bring network building and operations experience.

Goal:

Fund and enable broadband network deployment.

Benefits:

1. The public sector transfers much of the risk for private investment. For example, the public sector has many funding tools available, including incentivizing continued investment through tax credits, encouraging greater availability of private capital through government guaranteed loans, or government being a direct source of capital through loans or grants.
2. The partnership can aggregate demand and reduce barriers to deployment.
3. By working together, public and private parties can educate and build awareness needed for the public to better integrate the use of broadband into their lives, thereby improving the business case for broadband deployment.
4. A good partnership concentrates investment on non-duplicative networks and aims to ensure that all residents have access to adequate broadband service.

Action Items:

1. Educate high capacity institutions on the benefits and identify opportunities for collaboration.
2. Develop a finance and business model for any proposed projects.
3. Fund deployment of broadband.

Assist Providers with Building Necessary Wireless Infrastructure (Local Submission)

Routinely assess the wireless coverage across the Island for major carriers to uncover areas in need of service improvements. Maintain data on existing vertical assets of cell towers and antenna placement locations and provide carriers with support for the site selection and permitting process. Manage and report progress.

Goal:

Improve wireless call quality and reliability through the build-out of 4G/LTE service for the entire Island.

Benefits:

1. Enables wireless services to reach residents, visitors, businesses, and organizations.
2. Catalogues the vertical assets and collects the contacts.
3. Enables fast accurate solutions to wireless coverage problems.
4. Lasting and successful solutions to call and data quality and reliability issues.

Action Items:

1. Routinely survey call and data services for the four main carriers on the Island.
2. Advise carriers of locations where improvements to the wireless network are needed.
3. Suggest alternate solutions for quality, reliability, and coverage.
4. Support the site selection and permitting process.
5. Manage and report on progress toward service improvements.

Quarterly Technology Forum for Economic Development

Develop and host a technology forum for residents and businesses to increase awareness of broadband value, service options, and the potential impact on quality of life. The technology forum should facilitate community partnerships between leaders in local government and the private sector, including non-profits and private businesses in the education, healthcare, and agriculture sectors, with the goal of ensuring that residents have at least one place in the community to use powerful new broadband technologies, and that this asset will be sustained over time. Furthermore, the technology forum should highlight success stories as evidence of the impact of technology.

Goal:

A quarterly technology forum should bring together community stakeholders to develop a dialogue about how public and private stakeholders can collectively and separately improve broadband access, education, adoption, and use in support of economic development.

Benefits:

1. Sharing technology industry advancements and applications.
2. Highlights successes, opportunities, and challenges regarding community technology planning.
3. Develops ongoing dialogue around improving broadband access, adoption, and use.

Action Items:

1. Monitor technology industry developments.
2. Identify advancements applicable to this community.
3. Present testimonial evidence from community.
4. Identify specific opportunities in the community for businesses and residents.
5. Identify stakeholder demands that are not being met.

Feature Cyber Education (Local Submission)

The need for proficiency with technology is growing as more jobs become dependent on technology. Many of today's jobs are beyond traditional roles in hardware and software development, trending more toward big data processes in retail, banking, insurance, healthcare, and education. To promote technology and digital literacy to young people and families, efforts will be made to form business, academic, and community partnerships to host a cyber-event or series that provides a project-based, fun, hands-on event for children to experience some of the latest in technology, such as 3-D printing demonstrations.

Goal:

Hold a Cyber event that demonstrates emerging technologies and potential job-related skills, to help increase future job opportunities for students.

Benefits:

1. Promotes the development of the skills needed for a competitive workforce.
2. Recognizes the talent and significant achievements in leveraging technology for innovation and growth.

Action Items:

1. Form community partnerships and work with Connect South Carolina to host an event on the Island.
2. Promote the event in the community.

List of Other Action Items

Below is a list of 4 other action items proposed by the Hilton Head Island Information Technology Taskforce to accelerate broadband access, adoption, and use.

ACCESS

Broadband Availability

1. Identify and Populate Community Supply and Demand Matrix (Local Submission)

Conduct a broadband survey to understand population segment service needs and how they are being met with services from Internet service providers. The matrix will show broadband supply and demand alternatives for different community segments, such as students, businesses, government agencies, and visitors.

Goal:

Understand existing and future needs for broadband supply and demand in different community segments.

Benefits:

1. Establishes a better understanding of the key drivers of the broadband market and their needs.
2. Enables project-level planning for tactical deployment of broadband Internet services.
3. Validates the business case for network build out and capacity investment.

Action Items:

1. Develop a project team to design and conduct a survey that that can provide community segment specific information on broadband supply and demand.
2. Research alternative solutions for different community segment demands.
3. Prepare a matrix presentation showing the different community segments needs and identify potential solutions based on various technology options.
4. Tabulate location and project data and display the tabulated data on maps to identify clusters of homes or businesses in need of greater access to broadband or increased speeds.
5. Present and discuss the survey results with prospective Internet service providers along with maps of the responses to encourage service improvements on the Island.

2. Recognize Technology Achievements in the Community (Local Submission)

Create community awards that recognize achievements in improved broadband access, adoption, and use. The satisfaction of both residents and visitors on the Island is increasingly

tied to the quality of wired and wireless access to the Internet. This is particularly true of accommodations where visitors spend much of their time. There must be sufficient broadband capability based on the time of day, day of week, and point within the travel season to meet visitor expectations. Broadband-enabled technologies can also be used to create more connected businesses and special events. To emphasize the value of providing connected accommodations and the creative use of broadband-enabled technologies to improve the experiences of residents and visitors on the Island, award those that achieve best practice standards.

Goal:

Increase the connectivity on the Island and encourage the creative use of broadband and technology to improve the experiences of residents and visitors on the Island.

Benefits:

1. Provides visitors with services relative to their expectations.
2. Increases residents' satisfaction.
3. Encourages return visits and long-term residency.

Action Items:

1. Develop targets for connectivity based on industry best practices.
2. Recognize accommodations and applications that meet the targets.
3. Publicize achievements.

3. Connect the Beach (Local Submission)

The beach is the Island's premier destination. Making Wi-Fi access available in locations along the beach will increase access to the Internet for beachgoers and promote Hilton Head Island as a place to live, work, and play. As the gaps in Wi-Fi access disappear along the beach, the Island will also have a connected beach that can help to strengthen the appeal of the Island.

Goal:

Expanded Wi-Fi access on the beach.

Benefits:

1. Enhances services for residents, visitors, and corporate meetings.
2. Promotes Hilton Head Island as a connected destination.
3. Attracts return visitors.
4. Provides a competitive marketing advantage for new business development.

Action Items:

1. Develop target areas for Wi-Fi on the beach.
2. Deploy service in those areas.

3. Promote Hilton Head Island as a connected beach destination.

Broadband Speeds – No Action Items.

Broadband Competition – No Action Items.

Middle Mile Access – No Action Items.

Mobile Broadband Availability – No Action Items.

ADOPTION

Digital Literacy – No Action Items.

Public Computer Access – No Action Items.

Broadband Awareness – No Action Items.

Vulnerable Population Focus – No Action Items.

USE

Economic Opportunity – No Action Items.

Education

4. Expand the Learning Environment Past the Boundaries of the School (Local Submission)

Find available resources to accomplish the objectives of education that extend outside of school time, for both content and access to digital learning. Find other leading edge school districts that have deployed educational technologies.

Goal:

Make access to education anytime and anywhere.

Benefits:

1. Increase learning time by extending learning beyond the classroom walls.
2. Individualize learning and increase student engagement in school.
3. Encourage self-directed learning.
4. Enable parents to more effectively support their children at home.

Action Items:

1. Work with community education committees to support the school initiatives for access and content.
2. Work with schools to assess the rollout of current technology initiatives.

Government – No Action Items.

Healthcare – No Action Items.



APPENDIX 1: STATEWIDE PERSPECTIVE OF BROADBAND

Statewide Infrastructure

As part of the South Carolina State Broadband Initiative (SBI), and in partnership and at the direction of the Office of the Governor, Connect South Carolina produced an inaugural map of broadband availability in spring 2010. The key goal of the map was to highlight communities and households that remain unserved or underserved by broadband service; this information was essential to estimating the broadband availability gap in the state and understanding the scope and scale of challenges in providing universal broadband service to all citizens across the state. Since the map’s initial release, Connect South Carolina has collected and released new data every six months, with updates in October and April annually.

The most current Statewide and County Specific Broadband Inventory Maps released in the spring of 2014 depict a geographic representation of provider-based broadband data represented by cable, DSL, wireless, fiber, fixed wireless and mobile wireless. These maps also incorporate data such as political boundaries and major transportation networks in the state. Vertical assets that can be utilized for broadband network facilitation or transmission have also added to the interactive mapping application. A statewide map is found at <http://www.connectsc.org/mapping/state>. The county maps are found at http://www.connectsc.org/community_profile/find_your_county/south%20carolina.

Table 1: Estimate of Broadband Service Availability in the State of South Carolina By Speed Tier Among Fixed Platforms

SBI Download Speed Tiers	Unserved Households ('000)	Served Households ('000)	Percent Households by Speed Tier
At Least 768 Kbps/200 Kbps	54	1,747	96.98
At Least 1.5 Mbps/200 Kbps	58	1,743	96.79
At Least 3 Mbps/768 Kbps	107	1,695	94.08
At Least 6 Mbps/1.5 Mbps	208	1,593	88.45
At Least 10 Mbps/1.5 Mbps	212	1,589	88.24
At Least 25 Mbps/1.5 Mbps	328	1,474	81.81
At Least 50 Mbps/1.5 Mbps	349	1,453	80.64
At Least 100 Mbps/1.5 Mbps	1,116	685	38.02
At Least 1 Gbps/1.5 Mbps	1,801	0	0.00

Source: Connect South Carolina, April 2014

Table 1 reports updated summary statistics of the estimated fixed, terrestrial broadband service inventory (excluding mobile wireless and satellite service) across the state of South Carolina; it presents the number and percentage of unserved and served households by speed tiers. The total number of households in South Carolina in 2010 was 1,801,181, for a total population of approximately 4 million people. Table 1 indicates that 96.98% of households are able to connect to broadband at download speeds of at least 768 Kbps. This implies that the number of households originally estimated by Connect South Carolina to be unserved has dropped from 81,313 households in the fall of 2010 to 54,395 households in the spring of 2014. Further, approximately 1,694,551 households across South Carolina have broadband speeds available of at least 3 Mbps download and 768 Kbps upload. The percentage of South Carolina households having fixed broadband speeds available of at least 6 Mbps download is estimated at 88.45%.

Taking into account both fixed and mobile broadband service platforms, an estimated 96.98% of South Carolina households have broadband available from at least one provider at download speeds of 768 Kbps or higher. This implies that .05% of households remain unserved by a terrestrial broadband connection (including mobile wireless, but excluding satellite services).

As differences in broadband availability estimates between the fall of 2010 and the spring of 2014 show, additional participating broadband providers can have a large impact upon South Carolina broadband mapping inventory updates. Furthermore, the measured broadband inventory provides an estimate of the true extent of broadband coverage across the state. There is a degree of measurement error inherent in this exercise, which should be taken into consideration when analyzing the data. This measurement error will decrease as local, state, and federal stakeholders identify areas where the displayed coverage is underestimated or overestimated. Connect South Carolina welcomes such feedback to be analyzed in collaboration with broadband providers to correct errors identified in the maps.

In addition, the broadband availability data collected, processed, and aggregated by Connect South Carolina has been sent on a semi-annual basis to the NTIA to be used in the National Broadband Map, and comprises the source of South Carolina's broadband availability estimates reported by the NTIA and the FCC in the national map's data. The National Broadband Map can be found here: <http://www.broadbandmap.gov> and the Map's specific page for South Carolina can be found here: <http://www.broadbandmap.gov/summarize/state/south-carolina>.

Interactive Map

Connect South Carolina provides My ConnectView™, an online tool developed and maintained by Connected Nation, intended to allow users to create completely customized views and maps of broadband infrastructure across the state. The self-service nature of this application empowers South Carolina's citizens to take an active role in seeking service, upgrading service,

or simply becoming increasingly aware of what broadband capabilities and possibilities exist in their area, city, county, or state.

<http://www.connectsc.org/interactive-map>

For additional maps and other related information, visit:

<http://www.connectsc.org/broadband-landscape>

Business and Residential Technology Assessments

To complement the broadband inventory and mapping data, Connect South Carolina periodically conducts statewide residential and business technology assessments to understand broadband demand trends and across the state. The purpose of this research is to better understand the drivers and barriers to technology and broadband adoption and estimate the broadband adoption gap across the state of South Carolina. Key questions the data address are: who, where, and how are households in South Carolina using broadband technology? How is this technology impacting South Carolina households and residents? And, who is not adopting broadband service and why? What are the barriers that prevent citizens from embracing this empowering technology?

Through Connect South Carolina's research, many insights are able to be collected. The most recent residential technology revealed the following key findings:

- Statewide, 76% of households in the state subscribe to home broadband service, leaving more than 424,000 households not connected. Among these households, the main barrier to home broadband adoption is the belief that broadband is not relevant or beneficial to them.
- Approximately 967,000 working-age adults in South Carolina would need assistance with tasks that are often required by employers, such as creating a spreadsheet, going online from a mobile device, using a word processor, or sending an e-mail.
- More than three out of four non-adopters in South Carolina (78%) say that it would be easier for them to shop, seek out healthcare information, or interact with government offices if they had Internet access at home.

Additionally, an assessment on technology in businesses released in September of 2014 in a report titled *Technology Adoption Among South Carolina Businesses* revealed the following key findings:

- Across South Carolina, 78% of businesses subscribe to broadband service, representing approximately 22,000 South Carolina businesses that still do not use or benefit from broadband.
- 16,000 Internet-connected businesses want more bandwidth; of those, nearly two out of five (37%) report that they can't get faster service where they are located.

- Over two-fifths of South Carolina businesses (43%) earn revenues online. These represent approximately \$30.3 billion in annual revenues from online sales.

For more information on the statewide information described, visit the Connect South Carolina website at <http://www.connectsc.org/>.



APPENDIX 2: PARTNER AND SPONSORS

Connect South Carolina, in partnership with the State of South Carolina Office of the Governor, supports the state's reinvention and technological transformation through innovation, job creation, and entrepreneurship via the expansion of broadband technology and increased usage by South Carolina residents. In 2009, Connect South Carolina partnered with the state of South Carolina to engage in a comprehensive broadband planning and technology initiative as part of the national effort to map and expand broadband. The program began by gathering provider data to form a statewide broadband map, and has progressed to the planning and development stage. At this point the program is expanding to include community engagement in local technology planning, identification of opportunities with existing programs, and implementation of technology projects designed to address digital literacy, improve education, give residents access to global Internet resources, and stimulate economic development.

<http://www.connectsc.org>

Connected Nation (Connect South Carolina's parent organization) is a leading technology organization committed to bringing affordable high-speed Internet and broadband-enabled resources to all Americans. Connected Nation effectively raises the awareness of the value of broadband and related technologies by developing coalitions of influencers and enablers for improving technology access, adoption, and use. Connected Nation works with consumers, community leaders, states, technology providers, and foundations, including the Bill & Melinda Gates Foundation, to develop and implement technology expansion programs with core competencies centered on a mission to improve digital inclusion for people and places previously underserved or overlooked.

<http://www.connectednation.org>

National Telecommunications and Information Administration (NTIA) is an agency of the United States Department of Commerce that is serving as the lead agency in running the State Broadband Initiative (SBI). Launched in 2009, NTIA's State Broadband Initiative implements the joint purposes of the Recovery Act and the Broadband Data Improvement Act, which envisioned a comprehensive program, led by state entities or non-profit organizations working at their direction, to facilitate the integration of broadband and information technology into state and local economies. Economic development, energy efficiency, and advances in education and healthcare rely not only on broadband infrastructure, but also on the knowledge and tools to leverage that infrastructure.

NTIA has awarded a total of \$293 million for the SBI program to 56 grantees, one each from the 50 states, 5 territories, and the District of Columbia, or their designees. Grantees such as Connect South Carolina are using this funding to support the efficient and creative use of

broadband technology to better compete in the digital economy. These state-created efforts vary depending on local needs but include programs to assist small businesses and community institutions in using technology more effectively, developing research to investigate barriers to broadband adoption, searching out and creating innovative applications that increase access to government services and information, and developing state and local task forces to expand broadband access and adoption.

Since accurate data is critical for broadband planning, another purpose of the SBI program is to assist states in gathering data twice a year on the availability, speed, and location of broadband services, as well as the broadband services used by community institutions such as schools, libraries, and hospitals. This data is used by NTIA to update the National Broadband Map, the first public, searchable nationwide map of broadband availability launched February 17, 2011.

APPENDIX 3: THE NATIONAL BROADBAND PLAN

The National Broadband Plan, released in 2010 by the Federal Communications Commission, has the express mission of creating a high-performance America—a more productive, creative, efficient America in which affordable broadband is available everywhere and everyone has the means and skills to use valuable broadband applications. The plan seeks to ensure that the entire broadband ecosystem—networks, devices, content and applications— is healthy.

The plan recommends that the country adopt and track the following six goals to serve as a compass over the next decade:

GOAL No. 1: At least 100 million U.S. homes should have affordable access to actual download speeds of at least 100 megabits per second and actual upload speeds of at least 50 megabits per second.

GOAL No. 2: The United States should lead the world in mobile innovation, with the fastest and most extensive wireless networks of any nation.

GOAL No. 3: Every American should have affordable access to robust broadband service and the means and skills to subscribe if they so choose.

GOAL No. 4: Every American community should have affordable access to at least 1 gigabit per second broadband service to anchor institutions such as schools, hospitals, and government buildings.

GOAL No. 5: To ensure the safety of the American people, every first responder should have access to a nationwide, wireless, interoperable broadband public safety network.

GOAL No. 6: To ensure that America leads in the clean energy economy, every American should be able to use broadband to track and manage their real-time energy consumption.

To learn more, visit: www.broadband.gov

APPENDIX 4: WHAT IS CONNECTED?

The goal of Connect South Carolina’s “Connected” program is to empower locally informed and collaborative technology planning that addresses each community’s need for improved access, adoption, and use of technology:

- **ACCESS** – Does your community have access to affordable and reliable broadband service?
- **ADOPTION** – Is your community addressing the barriers to broadband adoption?
- **USE** – Are residents using technology to improve their quality of life?

Connected Nation leverages state-based public-private partnerships to engage residents at the local level. Regionally based staff provide “train-the-trainer” activities to local leaders, such as librarians, school administrators, economic development professionals, and public officials, and help them organize multi-sector technology planning teams, inventory local technology resources and initiatives, assess local technology access, adoption, and use, and develop local strategies that target specific technology gaps in the community.

Connected’s community technology-planning framework is cyclical. As with other forms of community planning – and especially so with technology planning – change is the only constant. At the community level, changing technology requirements, shifting demographics, economic drivers, and workforce requirements may expose or create new digital divides. Connected’s community technology-planning framework supports a sustained effort.

Connected Planning Process

Connected’s community technology-planning framework provides a clear path for the sustainable acceleration of broadband access, adoption, and use.



Step 1: Engage. Successful strategies to bridge the local digital divide and increase broadband access, adoption, and use are predicated on broad and sustained stakeholder participation. A successful local technology planning team should include people from multiple sectors, including:

- State and Local Government
- Public Safety
- Education (K-12, Higher Ed)
- Library
- Business & Industry, Agriculture, Recreation and Tourism
- Healthcare
- Community Organizations
- Technology Providers

Step 2: Assess. The Connected planning process guides the local technology planning team through an assessment of community technology resources, strengths, assets, needs, and gaps in order to identify and develop strategies to address specific technology gaps and opportunities in the community. Bolstered by benchmarking data that had been gathered through Connect South Carolina’s mapping and market research, the local technology planning team works with community members to benchmark local broadband access, adoption, and use via the Connected Assessment, which measures:

ACCESS	ADOPTION	USE
1. Broadband Availability	6. Digital Literacy	10. Economic Opportunity
2. Broadband Speeds	7. Public Computer Centers	11. Education
3. Broadband Competition	8. Broadband Awareness	12. Government
4. Middle Mile Access	9. Vulnerable Population Focus	13. Healthcare
5. Mobile Broadband Availability		

Step 3: Plan. Once community resources and needs are identified, the community planning team begins to identify local priorities and policies, programs, and technical solutions that will accelerate broadband access, adoption, and use. Connected Nation provides recommended actions based on best practices from communities across the United States.

Step 4: Act. The technology planning team works together to ensure that selected policies, programs, and technical solutions are adopted, implemented, improved, and maintained. The Connected program also provides a platform for collaboration and the sharing of best practices between communities. Connected Nation also provides communications support to raise awareness of your community’s efforts. For communities that measurably demonstrate proficiency in broadband access, adoption, and use in the Connected Assessment, Connected Nation offers Connected certification, a nationally recognized certification that provides an avenue for pursuing opportunities as a recognized, technologically advanced community.

APPENDIX 5: GLOSSARY OF TERMS

#

3G Wireless - Third Generation - Refers to the third generation of wireless cellular technology. It has been succeeded by 4G wireless. Typical speeds reach about 3 Mbps.

4G Wireless - Fourth Generation - Refers to the fourth generation of wireless cellular technology. It is the successor to 2G and 3G. Typical implementations include LTE, WiMax, and others. Maximum speeds may reach 100 Mbps, with typical speeds over 10 Mbps.

A

ARRA - American Recovery and Reinvestment Act.

ADSL - Asymmetric Digital Subscriber Line - DSL service with a larger portion of the capacity devoted to downstream communications, less to upstream. Typically thought of as a residential service.

ATM - Asynchronous Transfer Mode - A data service offering by ASI that can be used for interconnection of customers' LAN. ATM provides service from 1 Mbps to 145 Mbps utilizing Cell Relay Packets.

B

Bandwidth - The amount of data transmitted in a given amount of time; usually measured in bits per second, kilobits per second, and megabits per second.

BIP - Broadband Infrastructure Program - Part of the American Recovery and Reinvestment Act (ARRA), BIP is the program created by the U.S. Department of Agriculture focused on expanding last mile broadband access.

Bit - A single unit of data, either a one or a zero. In the world of broadband, bits are used to refer to the amount of transmitted data. A kilobit (Kb) is approximately 1,000 bits. A megabit (Mb) is approximately 1,000,000 bits.

BPL - Broadband Over Powerline - An evolving theoretical technology that provides broadband service over existing electrical power lines.

BPON - Broadband Passive Optical Network - A point-to-multipoint fiber-lean architecture network system which uses passive splitters to deliver signals to multiple users. Instead of running a separate strand of fiber from the CO to every customer, BPON uses a single strand of fiber to serve up to 32 subscribers.

Broadband - A descriptive term for evolving digital technologies that provide consumers with integrated access to voice, high-speed data service, video-demand services, and interactive delivery services (e.g. DSL, cable Internet).

BTOP - Broadband Technology Opportunities Program - Part of the American Recovery and Reinvestment Act (ARRA), BTOP is the program created by the U.S. Department of Commerce

focused on expanding broadband access, expanding access to public computer centers, and improving broadband adoption.

C

Cable Modem - A modem that allows a user to connect a computer to the local cable system to transmit data rather than video. It allows broadband services at speeds of five Mbps or higher.

CAP - Competitive Access Provider - (or “Bypass Carrier”) A company that provides network links between the customer and the Inter-Exchange Carrier or even directly to the Internet Service Provider. CAPs operate private networks independent of Local Exchange Carriers.

Cellular - A mobile communications system that uses a combination of radio transmission and conventional telephone switching to permit telephone communications to and from mobile users within a specified area.

CLEC - Competitive Local Exchange Carrier - Wireline service provider that is authorized under state and federal rules to compete with ILECs to provide local telephone and Internet service. CLECs provide telephone services in one of three ways or a combination thereof: a) by building or rebuilding telecommunications facilities of their own, b) by leasing capacity from another local telephone company (typically an ILEC) and reselling it, or c) by leasing discreet parts of the ILEC network referred to as UNEs.

CMTS - Cable Modem Termination System - A component (usually located at the local office or head end of a cable system) that exchanges digital signals with cable modems on a cable network, allowing for broadband use of the cable system.

CO - Central Office - A circuit switch where the phone and DSL lines in a geographical area come together, usually housed in a small building.

Coaxial Cable - A type of cable that can carry large amounts of bandwidth over long distances. Cable TV and cable modem broadband service both utilize this technology.

Community Anchor Institutions (CAI) - Institutions that are based in a community and larger user of broadband. Examples include schools, libraries, healthcare facilities, and government institutions.

CWDM - Coarse Wavelength Division Multiplexing - Multiplexing (more commonly referred to as WDM) with less than 8 active wavelengths per fiber.

D

Dial-Up - A technology that provides customers with access to the Internet over an existing telephone line. Dial-up is much slower than broadband.

DLEC - Data Local Exchange Carrier - DLECs deliver high-speed access to the Internet, not voice. DLECs include Covad, Northpoint, and Rhythms.

Downstream - Data flowing from the Internet to a computer (surfing the net, getting e-mail, downloading a file).

DSL - Digital Subscriber Line - The use of a copper telephone line to deliver “always on” broadband Internet service.

DSLAM - Digital Subscriber Line Access Multiplier - A piece of technology installed at a telephone company's CO that connects the carrier to the subscriber loop (and ultimately the customer's PC).

DWDM - Dense Wavelength Division Multiplexing - A SONET term which is the means of increasing the capacity of SONET fiber-optic transmission systems.

E

E-rate - A federal program that provides subsidy for voice and data lines to qualified schools, hospitals, Community-Based Organization (CBOs), and other qualified institutions. The subsidy is based on a percentage designated by the FCC.

Ethernet - A local area network (LAN) standard developed for the exchange data with a single network. It allows for speeds from 10 Mbps to 10 Gbps.

EON - Ethernet Optical Network - The use of Ethernet LAN packets running over a fiber network.

EvDO - Evolution Data Only - A new wireless technology that provides data connections that are 10 times faster than a regular modem.

F

FCC - Federal Communications Commission - A federal regulatory agency that is responsible for, among other things, regulating VoIP.

Fixed Wireless Broadband - The operation of wireless devices or systems for broadband use at fixed locations such as homes or offices.

Franchise Agreement - An agreement between a cable provider and a government entity that grants the provider the right to serve cable and broadband services to a particular area - typically a city, county, or state.

FTTH - Fiber To The Home - Another name for fiber to the premises, where fiber optic cable is pulled directly to an individual's residence or building allowing for extremely high broadband speeds.

FTTN - Fiber To The Neighborhood - A hybrid network architecture involving optical fiber from the carrier network, terminating in a neighborhood cabinet that converts the signal from optical to electrical.

FTTP - Fiber To The Premise (Or FTTB – Fiber To The Building) - A fiber optic system that connects directly from the carrier network to the user premises.

G

Gbps - Gigabits per second - 1,000,000,000 bits per second or 1,000 Mbps. A measure of how fast data can be transmitted.

GPON - Gigabyte-Capable Passive Optical Network - Uses a different, faster approach (up to 2.5 Gbps in current products) than BPON.

GPS - Global Positioning System - A system using satellite technology that allows an equipped user to know exactly where he is anywhere on earth.

GSM - Global System for Mobile Communications - This is the current radio/telephone standard in Europe and many other countries except Japan and the United States.

H

HFC - Hybrid Fiber Coaxial Network - An outside plant distribution cabling concept employing both fiber optic and coaxial cable.

Hotspot - See *Wireless Hotspot*.

I

IEEE - Institute of Electrical and Electronics Engineers (pronounced “Eye-triple-E.”).

ILEC - Incumbent Local Exchange Carrier - The traditional wireline telephone service providers within defined geographic areas. They typically provide broadband Internet service via DSL technology in their area. Prior to 1996, ILECs operated as monopolies having the exclusive right and responsibility for providing local and local toll telephone service within LATAs.

IP-VPN - Internet Protocol - Virtual Private Network - A software-defined network offering the appearance, functionality, and usefulness of a dedicated private network.

ISDN - Integrated Services Digital Network - An alternative method to simultaneously carry voice, data, and other traffic, using the switched telephone network.

ISP - Internet Service Provider - A company providing Internet access to consumers and businesses, acting as a bridge between customer (end-user) and infrastructure owners for dial-up, cable modem, and DSL services.

K

Kbps - Kilobits per second - 1,000 bits per second. A measure of how fast data can be transmitted.

L

LAN - Local Area Network - A geographically localized network consisting of both hardware and software. The network can link workstations within a building or multiple computers with a single wireless Internet connection.

LATA - Local Access and Transport Areas - A geographic area within a divested Regional Bell Operating Company is permitted to offer exchange telecommunications and exchange access service. Calls between LATAs are often thought of as long-distance service. Calls within a LATA (IntraLATA) typically include local and local toll telephone services.

Local Loop - A generic term for the connection between the customer’s premises (home, office, etc.) and the provider’s serving central office. Historically, this has been a wire connection; however, wireless options are increasingly available for local loop capacity.

Low Income - Low income is defined by using the poverty level as defined by the U.S. Census Bureau. A community’s low-income percentage can be found at www.census.gov.

M

MAN - Metropolitan Area Network - A high-speed data intra-city network that links multiple locations with a campus, city, or LATA. A MAN typically extends as far as 50 kilometers (or 31 miles).

Mbps - Megabits per second - 1,000,000 bits per second. A measure of how fast data can be transmitted.

Metro Ethernet - An Ethernet technology-based network in a metropolitan area that is used for connectivity to the Internet.

Multiplexing - Sending multiple signals (or streams) of information on a carrier (wireless frequency, twisted pair copper lines, fiber optic cables, coaxial, etc.) at the same time.

Multiplexing, in technical terms, means transmitting in the form of a single, complex signal and then recovering the separate (individual) signals at the receiving end.

N

NTIA - National Telecommunications and Information Administration, which is housed within the United State Department of Commerce.

NIST - National Institute of Standards and Technology.

O

Overbuilders - Building excess capacity. In this context, it involves investment in additional infrastructure projects to provide competition.

OVS - Open Video Systems - A new option for those looking to offer cable television service outside the current framework of traditional regulation. It would allow more flexibility in providing service by reducing the build-out requirements of new carriers.

P

PON - Passive Optical Network - A Passive Optical Network consists of an optical line terminator located at the Central Office and a set of associated optical network terminals located at the customer's premises. Between them lies the optical distribution network comprised of fibers and passive splitters or couplers.

R

Right-of-Way - A legal right of passage over land owned by another. Carriers and service providers must obtain right-of-way to dig trenches or plant poles for cable and telephone systems and to place wireless antennae.

RPR - Resilient Packet Ring - Uses Ethernet switching and a dual counter-rotating ring topology to provide SONET-like network resiliency and optimized bandwidth usage, while delivering multi-point Ethernet/IP services.

RUS - Rural Utility Service - A division of the United States Department of Agriculture that promotes universal service in unserved and underserved areas of the country through grants, loans, and financing.

S

Satellite - Satellite brings broadband Internet connections to areas that would not otherwise have access, even the most rural of areas. Historically, higher costs and lower reliability have prevented the widespread implementation of satellite service, but providers have begun to overcome these obstacles, and satellite broadband deployment is increasing. A satellite works by receiving radio signals sent from the Earth (at an uplink location also called an Earth Station) and resending the radio signals back down to the Earth (the downlink). In a simple system, a signal is reflected, or "bounced," off the satellite. A communications satellite also typically converts the radio transmissions from one frequency to another so that the signal getting sent down is not confused with the signal being sent up. The area that can be served by a satellite is determined by the "footprint" of the antennas on the satellite. The "footprint" of a satellite is the area of the Earth that is covered by a satellite's signal. Some satellites are able to shape their footprints so that only certain areas are served. One way to do this is by the use of small beams called "spot beams." Spot beams allow satellites to target service to a specific area, or to provide different service to different areas.

SBI - State Broadband Initiatives, formerly known as the State Broadband Data & Development (SBDD) Program.

SONET - Synchronous Optical Network - A family of fiber-optic transmission rates.

Streaming - A Netscape innovation that downloads low-bit text data first, then the higher bit graphics. This allows users to read the text of an Internet document first, rather than waiting for the entire file to load.

Subscribership - Subscribership is the number of customers that have subscribed for a particular telecommunications service.

Switched Network - A domestic telecommunications network usually accessed by telephones, key telephone systems, private branch exchange trunks, and data arrangements.

T

T-1 - Trunk Level 1 - A digital transmission link with a total signaling speed of 1.544 Mbps. It is a standard for digital transmission in North America.

T-3 - Trunk Level 3 - 28 T1 lines or 44.736 Mbps.

U

UNE - Unbundled Network Elements - Leased portions of a carrier's (typically an ILEC's) network used by another carrier to provide service to customers.

Universal Service - The idea of providing every home in the United States with basic telephone service.

Upstream - Data flowing from your computer to the Internet (sending e-mail, uploading a file).

V

VDSL (or VHDSL) - Very High Data Rate Digital Subscriber Line - A developing technology that employs an asymmetric form of ADSL with projected speeds of up to 155 Mbps.

Video On Demand - A service that allows users to remotely choose a movie from a digital library and be able to pause, fast-forward, or even rewind their selection.

VLAN - Virtual Local Area Network - A network of computers that behave as if they were connected to the same wire even though they may be physically located on different segments of a LAN.

VoIP - Voice over Internet Protocol - A new technology that employs a data network (such as a broadband connection) to transmit voice conversations.

VPN - Virtual Private Network - A network that is constructed by using public wires to connect nodes. For example, there are a number of systems that enable one to create networks using the Internet as the medium for transporting data. These systems use encryption and other security mechanisms to ensure that only authorized users can access the network and that the data cannot be intercepted.

Vulnerable Groups -Vulnerable groups will vary by community, but typically include low-income, minority, senior, children, etc.

W

WAN - Wide Area Network - A communications system that utilizes cable systems, telephone lines, wireless, and other means to connect multiple locations together for the exchange of data, voice, and video.

Wi-Fi - Wireless Fidelity - A term for certain types of wireless local networks (WLANs) that uses specifications in the IEEE 802.11 family.

WiMax - A wireless technology that provides high-throughput broadband connections over long distances. WiMax can be used for a number of applications, including last mile broadband connections, hotspots, and cellular backhaul and high-speed enterprise connectivity for businesses.

Wireless Hotspot - A public location where Wi-Fi Internet access is available for free or for a small fee. These could include airports, restaurants, hotels, coffee shops, parks, and more.

Wireless Internet - 1) Internet applications and access using mobile devices such as cell phones and palm devices. 2) Broadband Internet service provided via wireless connection, such as satellite or tower transmitters.

Wireline - Service based on infrastructure on or near the ground, such as copper telephone wires or coaxial cable underground, or on telephone poles.