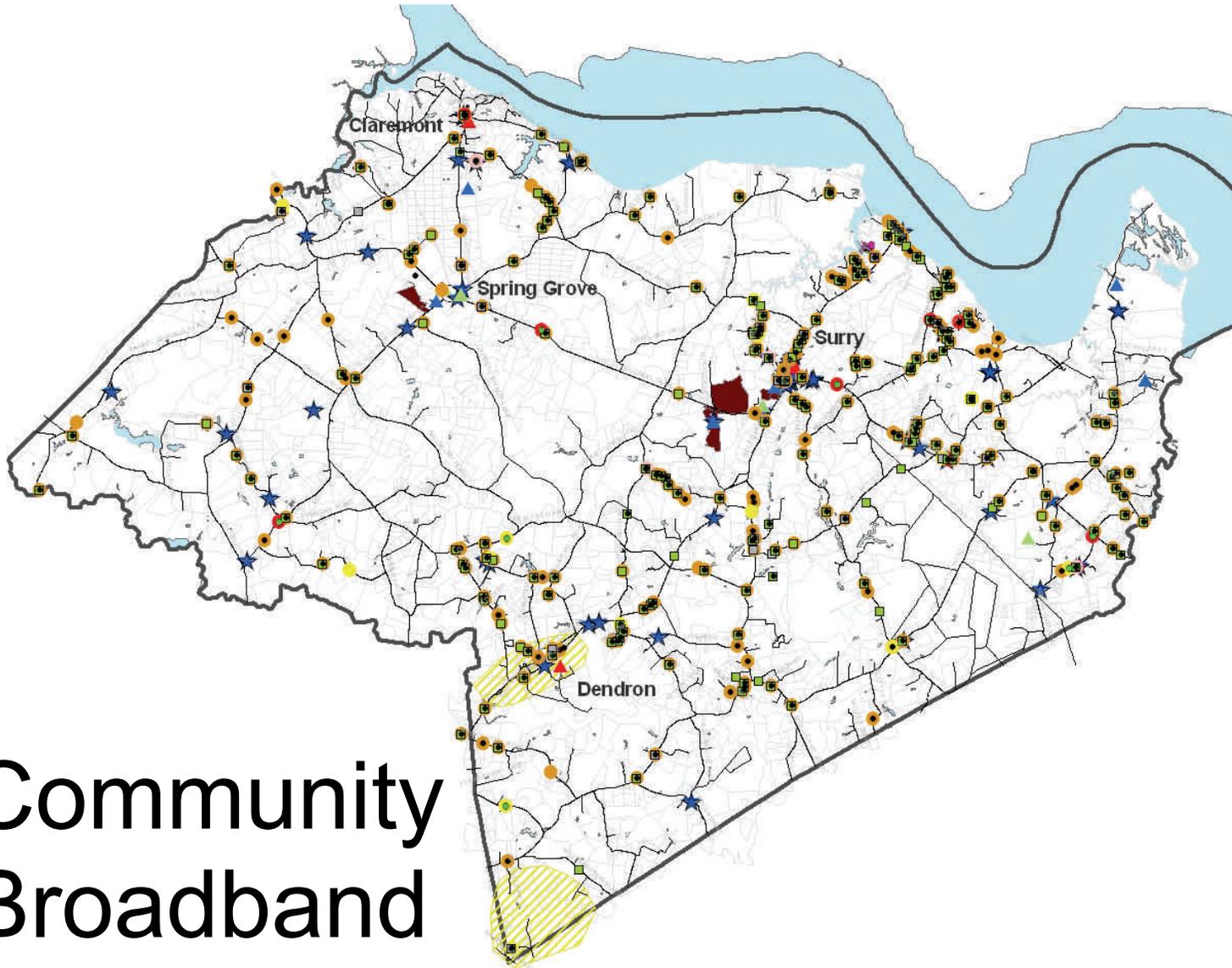




**ICON BROADBAND TECHNOLOGIES**

*A Division of Icon Engineering, Inc.*  
6745 Bells Ferry Road  
Woodstock, Georgia 30189

# Surry County, Virginia



## Community Broadband Planning

Phase I Final Report  
Needs Assessment and Broadband Education  
January 15, 2008



Phase I Telecommunications Planning Study
Community Needs Assessment
Broadband Education and Training
For
Surry County, Virginia

Transmittal Letter

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*Transmittal Letter*

January 7, 2008

Ms Rhonda Mack  
Mr. Tyrone Franklin  
County of Surry  
PO Box 357  
Surry, VA 23883

Re: Community Broadband Planning Study for Surry County, VA  
Phase I Report - Needs Assessment and Broadband Education Development Strategies

Dear Ms Mack and Mr. Franklin:

Icon Broadband Technologies (IBT) is pleased to submit this report of the Phase I Needs Assessment and Broadband Education Strategies for the Community Broadband Planning Study for Surry County. This Phase I report will be integrated into the final comprehensive telecommunications plan as the project progresses through Phase II.

Select survey data was mapped that included type and location of survey responses, type of Internet connection, level of satisfaction, inadequate Internet speed, and use of the Internet from home for work, school and job training. The selected points of interest address the scope of work in identifying the gap analysis, level of satisfaction, use, and locations where improvements are needed.

The County representatives and community stakeholders are to be commended in pursuing this initiative to research and analyze business, education, health care and residential demand for broadband communications services. Creating a comprehensive telecommunications plan to enhance usage and encourage broadband service expansion is a critical first step to achieving a state-of-the-art communication asset for economic development growth. We look forward to continuing to work with the management team in developing the community broadband plan.

Sincerely,  
ICON BROADBAND TECHNOLOGIES

Judy Bentley  
Vice President  
Icon Broadband Technologies



## **Executive Summary**

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With the assistance of the Virginia General Assembly and the Virginia Department of Housing and Community Development (DHCD), Surry County has undertaken a comprehensive telecommunications planning effort to identify and develop all elements of a successful community broadband network. Undertaken as part of the Virginia Rural Broadband Planning Initiative (VRBPI), the project is designed to create competitive communities and ensure community sustainability by building and utilizing telecommunications infrastructure.

The VRBPI has laid out a series of tasks which are designed to reach the project goals, consisting of:

1. Needs Assessment and Asset Inventory
2. Broadband Education Development Strategies and End User Application Identification
3. Last Mile Connectivity Options
4. Preliminary Design and Cost Estimates
5. Organization and Network Operation Options, and
6. Funding Strategies for Future Implementation Projects

The DHCD grants are very specific, emphasizing infrastructure investment for businesses, education and healthcare providers. Residential inclusion in the study is primarily focused on determining the availability of infrastructure as it relates to education and job training use, and opportunities for small, home based business creation.

Partial or complete funding for the projects from DHCD grants divided the tasks into Phase I and Phase II with the first Phase consisting of the first two tasks. Phase I is primarily a documentation phase which consisted of research and discussions with interested parties and community stakeholders, a mailed survey to 2,500 residents and 311 businesses, and GIS mapping of results. Phase I has now been completed. Primary findings from the first phase are:

- Satellite is primarily the fastest form of Internet access available to residents throughout the entire County - DSL and cable modem services are not available
- Surry County lags far behind the nation in the numbers who have higher than dial-up Internet speeds, due at least initially to unavailability and not a lack of education - residents and businesses are aware of the benefits, but a lack of high speed access discourages use of applications that influence social and economic change



- T1 access at a cost of approximately \$1,000 per month is the highest speed option available to businesses - significantly too expensive for small to medium business consideration
- Efforts to promote economic development through business recruitment are hampered without high speed access in the County, and specifically to the Surry West Business Center area where T1 is the only high speed option available
- Frequent downtime of the telephone infrastructure is reported by both business customers and public safety officials, ostensibly putting citizens at risk in the event of failure during emergencies. Failure during emergency situations has been documented.
- Population estimates for the County project a significant decrease in the numbers of working age adults (20-59) and an even greater population increase in the 60 and older age groups by 2020<sup>1</sup>
- Teleworking is not an option for residents without high speed access - only 20.8% of residents lived and worked in the County in 2000<sup>2</sup>
- Schools and health care providers are aware of the benefits that broadband communications bring to their tasks, but both segments are limited in their approach because of the high costs of fully utilizing broadband services
- There is no higher education facility located within the County to support the transition from high school to college, or for adult continuing education
- Without high speed access at home, students cannot take advantage of distance learning opportunities offered by the region's higher education partners
- A lack of technology dependent businesses within the County has resulted in the local technology-skilled workforce seeking work outside the County, and young adults not returning after earning technology degrees

Looking individually at the phase I tasks, the Needs Assessment and Asset Inventory documents communication technologies currently available in the study area and the extent of demand for broadband by all users. On the residential side broadband availability other than satellite consists only of wireless in a limited area. Few businesses are utilizing T1 access (1.5 Mbps) available at approximately \$1,000 per month; no businesses report using wireless for access.

While broadband service availability is extremely limited, the majority of homes (88%) have computers and some form of Internet service (84%). Based on their experience a majority find their level of Internet speed inadequate (84%). Over one-third of residents are using the Internet to work from home (34%) and

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<sup>1</sup> Crater Planning District Commission; Population Projections by Age Cohort Group from Virginia Employment Commission, [http://www.craterpdc.state.va.us/Data/age\\_cohort.htm](http://www.craterpdc.state.va.us/Data/age_cohort.htm)

<sup>2</sup> Virginia Economic Development Partnership, Surry County Community Profile, Census 2000 data



large numbers of families with children at home depend on the Internet to complete school work (58%). Teleworking is hampered by the limited availability of high-speed access options that enable secure connections to employers utilizing virtual private networks (VPNs) for remote access. Residential use covers a wide range of purposes with majorities of residents using the Internet to obtain news, plan travel, seeking medical information and to make purchases.

Although a majority of businesses use the Internet (93%), many are dissatisfied with too little bandwidth (78%) and the value received for the price paid for what services are available (24%). The primary business uses are e-mail, purchasing, communication between offices, research and customer service. Significant numbers of businesses anticipate future use of the Internet to expand their business presence through advertising and hosting a web site, and increasing productivity with access to training, distance learning, and video conferencing. Adoption of these applications that create efficiencies and growth opportunities for businesses will require access to high speed provider.

The school system has made significant investments in technology, but is not fully utilizing all of the resources available due to the high cost of access to higher bandwidth services from Verizon. Currently the schools are the technology leaders in the community but students cannot access additional online resources outside of school. Medical providers are limited in options to communicate with hospitals and medical centers, all of which are located outside of the County. Overall, information from outside of the area could be better utilized if higher bandwidth connections were economically available.

Summarizing the bandwidth needs of the various commercial market segments, education and health care facilities and major employers have the greatest unmet bandwidth needs. External learning resources are not being fully utilized because of limited budgets to purchase higher bandwidth connections. The library has limited bandwidth to expand access wirelessly to additional patrons and insufficient facilities to provide training. Access to library computers for free Internet access is critical for a number of citizens that do not have access at home, or for displaced workers using the Internet for job search. The County government offices have minimal connectivity limiting the ability to offer e-government services or to communicate optimally between all public safety locations and personnel. The lack of high speed access options beyond T1 (1.5 Mbps) is a significant deterrent to economic development efforts to bring businesses and jobs to Surry County.

The second task within Phase I examined Broadband education within the county. The State of Virginia has made computer technology a core portion of public education including early training into the use of



computers and distance learning opportunities for older students. John Tyler Community College partners with the high school to provide access to higher education opportunities, but there is no higher education facility within the County. Students must either commute distances of 25 miles or further for classes or leave the County entirely to attend college fulltime. Distance learning opportunities abound through Old Dominion University and the Virginia Community College System, but reliable high speed access is required to take advantage of real-time instructor-led courses. The closest Virginia Workforce Development Center is a satellite office located in Petersburg, providing limited assistance with job search. Resources for small and medium businesses to seek assistance with managing operations and access to financing are primarily at the Crater Small Business Development Center of Longwood University in Richmond. Entrepreneurs seeking information on new business planning are limited in the local resources available to them, and must attend classes during the day in the Richmond area.

For reasons due primarily to availability, virtually no segment of the community is using broadband communications to a high degree. The county government does not provide any portal to view meetings, make payments or access documents. Residents and businesses are limited in the applications that are feasible using dial-up or satellite access. Given the majority of residents and businesses that are using the Internet, higher speed access would encourage additional uses that influence social and economic change. Broadband education includes making residents aware of the benefits and convenience of online learning and job search. Businesses should be educated on the value of using the Internet for voice calling, secure network access, and marketing their business online, but high speed access must first be available. Faster than dial-up services at rates lower than the approximate \$50 per month for satellite access would enable citizens to increase use of the Internet. Education on accessing resources via the Internet beyond simple communication will increase usage, and demand will follow.

There is strong demand among both residents and businesses within Surry County for higher speed access. Over 60% of both segments of the community provided comments during the market assessment that encourage the County to continue to pursue options to expand high-speed availability on their behalf. Businesses report responses from Verizon regarding requests for expanding DSL access indicating this provider is focusing financial resources on fiber deployments to urban and suburban areas outside of Surry County, with no future plans for increasing access locally. Fiber optic connectivity was purportedly planned to be under construction in early 2003 in the Surry West Business Center, but its existence is not confirmed. Windsor Mills, a major employer and the only business in the Business Center area currently, leases two (2) T1 lines for Internet connectivity and phone service and reports unreliable service. Frequent trouble with the lines has resulted in all communications for the business disrupted, and this



business would welcome the opportunity to subscribe to higher bandwidth services. Cable providers Comcast and Charter have fiber in their distribution systems and are serving areas close to Surry County. The Mid Atlantic Broadband Cooperative is continuing to deploy additional fiber throughout Virginia and in the Hampton Roads/Newport News area, but initial routing does not indicate a point of presence (POP) planned for within Surry County.

The Phase I findings clearly identify a need for high speed connectivity options and competition in Surry County by all primary focus end-users: businesses, education institutions, and healthcare entities. Local government services as well as overall economic development initiatives are greatly hampered by the lack of broadband options in the County. As a result, the community does not have the tools needed to significantly improve quality of life issues such as job skill training through distance learning, attraction of new employers, incentives for young adults to live and work in the county, e-commerce competition in a global economy, and participation in on-line resources that remove rural barriers.

The second phase of study will look more specifically at how to improve bandwidth availability and examine the interest of service providers in expanding services to unserved areas. Priority areas will be defined and options for deploying fiber optics or other infrastructure to enable new providers to offer services will be explored. Costs will be developed and the feasibility of a County investment examined to determine options for enabling broadband deployment in Surry County.



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## **1.0 Community Needs Assessment and Asset Inventory**

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### **1.1 Background**

One objective of the Community Broadband Planning Study is to document the availability of communication technologies throughout the study area and to assess the amount of demand by residential and business end-users. Communication technologies include any form of Internet access, pay TV, and telephone delivered by any medium.

The use of a mailed survey allowed for a greater percentage of the population to be polled, including those that would potentially be reluctant to respond to telephone solicitations for surveying. The overwhelming popularity of the national Do Not Call list and the increasing use of caller ID to screen out unwanted calls substantiate use of a written survey as the preferred means to obtain community input from the largest number of respondents.

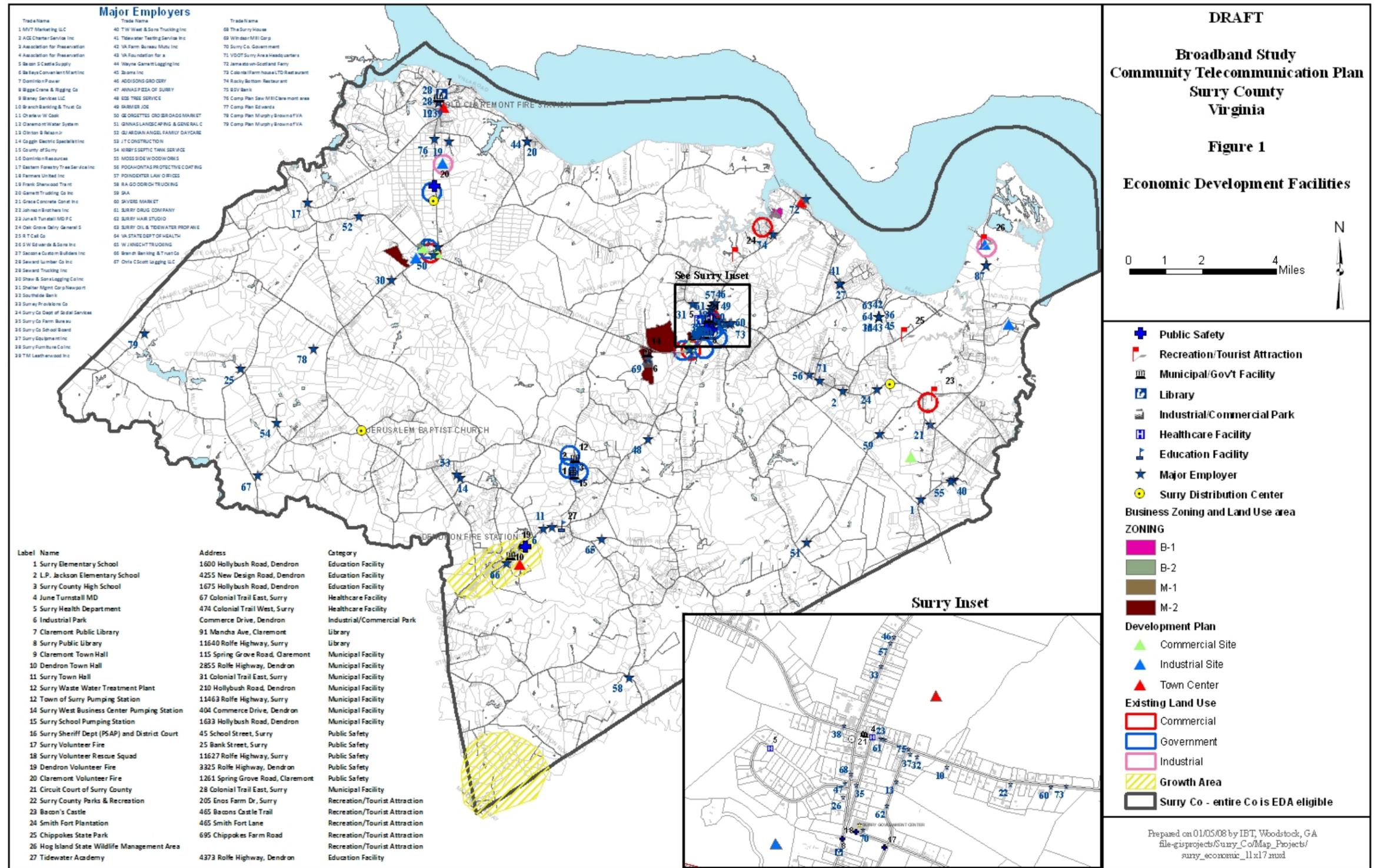
In addition to validating service availability by geographic area, end users provided valuable input to calculate demand for advanced technologies such as higher speed and wireless Internet access and phone service that uses the Internet as a transmission medium. This information is valuable to service providers contemplating the deployment of new services or to areas not presently served. Government leaders can use this knowledge as a tool for measuring how their community compares to others in relation to technology adoption by citizens, and for developing broadband education strategies.

Comments were solicited as to what changes or improvements to the current communication technology in Surry County would best meet citizens' needs. Local leaders can use this knowledge to expand the reach of government services and prioritize implementation efforts. Through the survey process, citizens have been recruited as stakeholders in their community's future.

### **1.2 Area Assets**

In preparation for a market survey to assess needs, base maps were developed for use throughout the study. Economic development personnel provided input on future growth areas. Local provider input and independent research was used to develop a telecommunication infrastructure map, and census data was applied to display population density throughout the County. Maps are displayed on the following pages.

Figure 1: Economic Development Features



**Figure 2: Current Telecommunication Infrastructure**

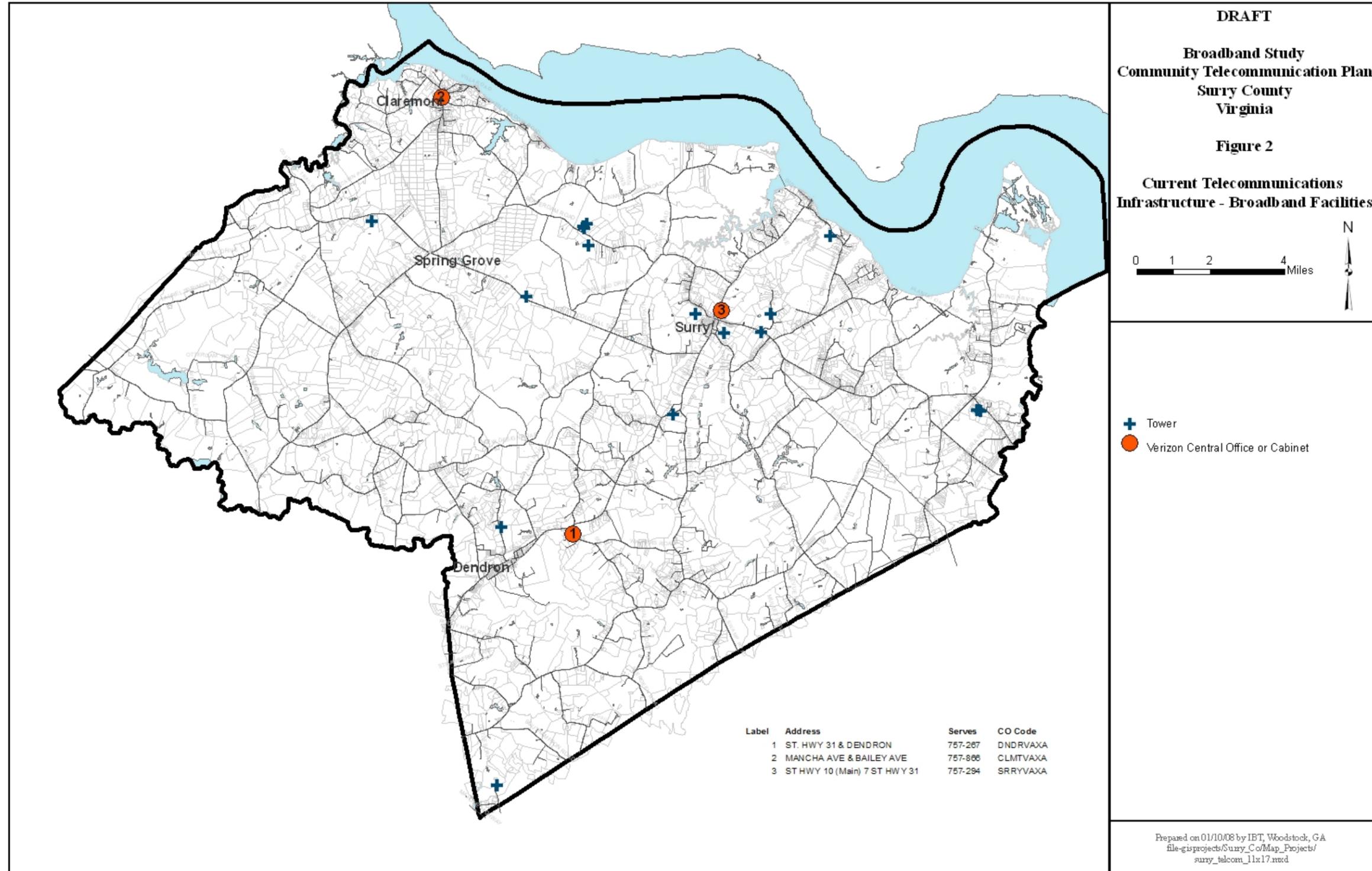


Figure 3: Population Density

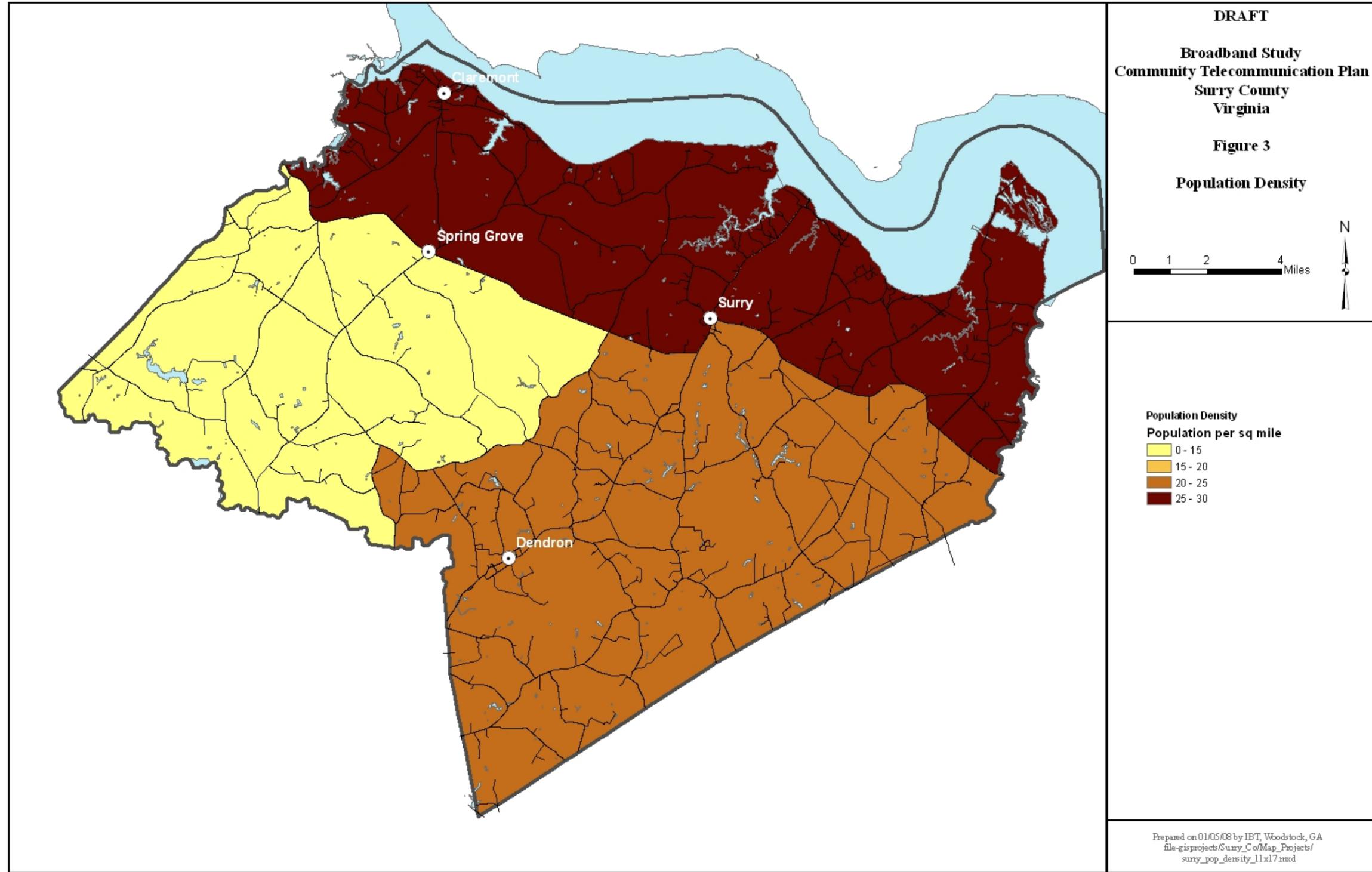
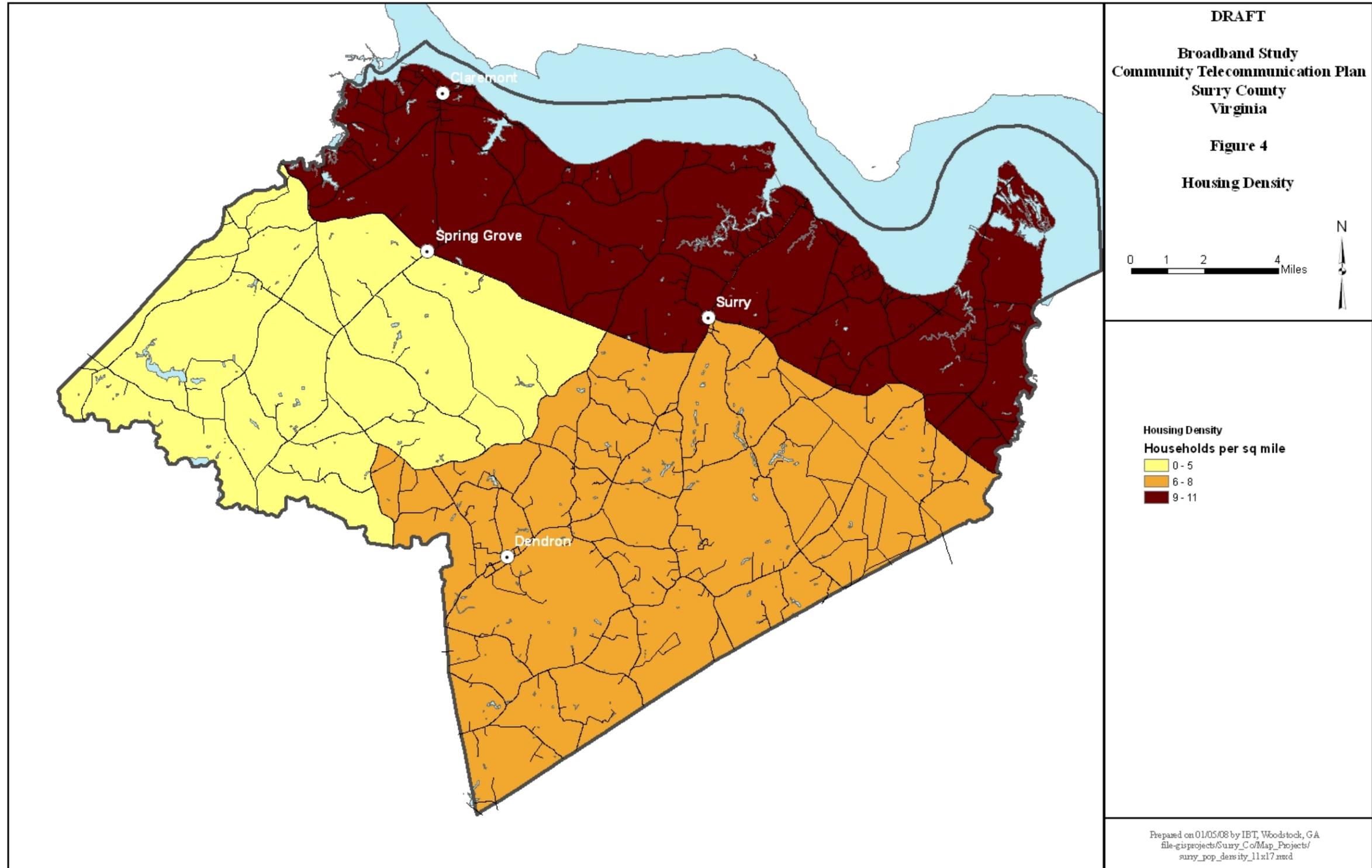


Figure 4: Housing Density





### **1.3 Survey Methodology**

A total of 2,500 residential surveys were distributed from residential lists procured by IBT personnel. Mailing address lists for County businesses were provided by the Commissioner of Revenue and a total of 311 business surveys were distributed.

Residential and business input was provided from both mailed and on-line surveys. A two-page survey (see Appendix A, Section 7.0) polled basic demographic data, Internet usage habits, method of access (e.g. dial-up, DSL, satellite), satisfaction with current providers, and monthly cost of access to the Internet. The survey could be completed and returned postage-paid with a minimum of user effort. The mailed survey was augmented by an online survey version. The domain name of [www.VAruralbroadband.com](http://www.VAruralbroadband.com) was purchased and used to make an exact replica of the mailed survey available for easy online entry. The results of the online survey are combined with the mailed survey results.

A targeted survey response rate of 10% was anticipated, returning a statistically valid sample size at a 95% confidence level. Response to the Surry County surveys was much higher however, resulting in return rates of 20.5% (513) residential and 14% (44) business. The high response rate is attributed to the efforts of County economic development personnel and the project management team in marketing the online survey and distributing additional survey copies throughout the community. This effort ensured that all County citizens were afforded the opportunity to provide input for the market assessment.

### **1.4 Local Internet Services**

#### **Residential**

Subscription Internet access is available to all residents via dial-up service at pricing ranging from \$10 to just over \$20 per month from a variety of providers. DSL and cable modem are not available in the County. High-speed wireless access is available in limited areas by local provider 380 Communications at pricing in excess of \$40 per month. Access via satellite provider HughesNet is available to all residents and businesses in the County with download speeds of 700 Kbps to 1.5 Mbps, ranging in price from \$60 to \$80 per month. WildBlue is an additional satellite provider targeting rural subscribers, with a choice of three tiers delivering download speeds of 512 Kbps to 1.5 Mbps, and ranging in price from \$49.95 to \$79.95 per month. Satellite subscribers must either purchase equipment at costs in the hundreds of dollars or pay higher rates which include the necessary equipment.



Another alternative to dial-up is cellular broadband access via a wireless data card. Verizon Wireless is the dominate provider of cellular service in the County, advertising download speeds of 600 Kbps to 1.4 Mbps in areas closest to serving towers. Coverage in areas furthest from the cell towers may be capable of providing download speeds in the 500-800 Kbps range. Pricing for the data card services is approximately \$60 per month and does not require a mobile phone subscription as well. Most cell phone providers are now offering web access from mobile phones for an additional fee of approximately \$20 per month. Cell phone and data card access is an option for remote workers such as rural health nurses, and employee access from home or on the road.

Costs vary widely when comparing providers and services by speed of service. Residential service is typically greatly oversubscribed<sup>3</sup>, and speeds are typically advertised as “up to”. All products are not available to all County residents, and in most cases speeds available are dependent upon the subscriber’s distance from the provider’s facility or equipment. The exception to this is satellite Internet service which requires a clear view to the southwestern sky. In addition to regular monthly fees for service, subscribers may be subject to one time fees for installation or equipment.

### **Business**

Subscription Internet access is available to all businesses via local and national dial up service providers at pricing similar to residential access. Costs to business customers for faster-than-dial up service are typically higher than that offered to residential customers due to increased support and quality of services agreements. DSL and cable modem access is often used by small businesses that have few users and are not ‘data intense’, primarily due to cost limitations - but Verizon has not deployed DSL in their central offices in Surry and there is no cable service in the County. Wireless Internet service is available in limited areas, primarily the Surry downtown area. Wireless is not reported in use by any businesses.

Many medium to large (and even some small) businesses can satisfy their needs with a full or partial T1 line that they can portion between voice and data services. Depending upon the number of telephone lines and frequency of use, voice traffic may use a relatively small percentage of bandwidth. Greater amounts of bandwidth are required for transferring data files, frequent Internet use and connecting branch offices. T1 lines offer dedicated bandwidth (1.5 Mbps up/down) to each user with higher reliability than DSL. T1 lines are available in some areas of the County at costs typically ranging between \$800 and \$1000 per

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<sup>3</sup> The practice of providing much lower total available bandwidth than each user is purchasing individually. If, for example 100 customers were sold “up to” 1 Mbps, and the ISP supplies only 1Mbps total, the service is oversubscribed 100 to 1. In periods of low or moderate usage it may work well, but provides very slow service during peak periods.



month, or in channel increments at lower cost. Service is provisioned over the local telephone company’s copper lines, although service agreements and Internet access may be provided by competing providers (e.g. AT&T). No businesses report subscribing to service over copper (Verizon) at speeds higher than T1.

### 1.5 Residential Use and Unmet Demand

#### Internet Access

Residential survey respondents ranged in age from 20 to over 65 years old; 68% of responses represented working age adults in the 20 to 59 age range. Response from citizens aged 60 and above was proportionate with census demographic characteristics for those age groups. Responses from families with children at home represented 44% of the survey group. The ages of children living at home are represented as follows:

<u>Under 5</u>	<u>5 – 17</u>	<u>18 or older</u>
<b>15%</b>	<b>59%</b>	<b>41%</b>

Computers are in the homes of 88% of survey respondents, and 84% of the total survey group subscribes to an Internet access service. These overall percentages in Surry County are on par with national estimates, and a comparison by age group indicates typical disparity between young adults and older generations as is typically common in rural areas.

<b>Computer Ownership and Internet Access By Age Group</b>		
<b>Age Group</b>	<b>No Computer in the Home</b>	<b>No Internet Access</b>
20 - 24	33%*	33%*
25 - 34	3%	3%
35 - 44	5%	9%
45 - 54	7%	14%
55 - 59	4%	4%
60 - 64	15%	21%
65 or Older	29%	33%
Families with Children at Home	2%	9%

\*Not statistically relevant; low number of responses for this age group by comparison.

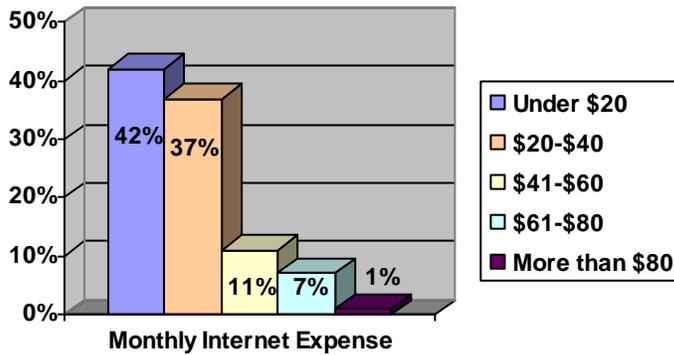
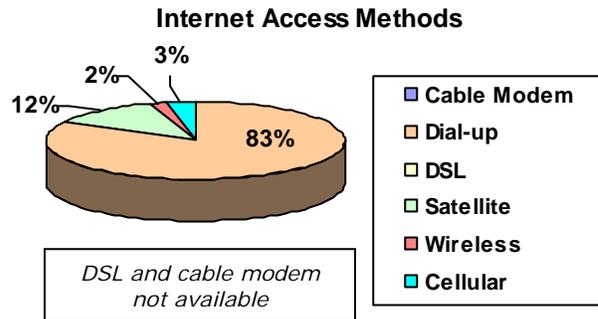
The majority of Internet users (83%) are subscribing to a dial-up Internet service. This is in sharp contrast to national estimates of between 72%<sup>4</sup> and 78% of active home Internet users going online via a

<sup>4</sup> Source: *Over Half of U.S. Households Subscribe to Broadband Internet*; Leichtman Research Group, Inc. (LRG), Press Release 7 June 2007, <http://www.leichtmanresearch.com/press/060707release.html>



broadband connection<sup>5</sup>. Cable modem and cable TV service was assumed to be non-existent in Surry County, yet service was reported by survey respondents with addresses within Surry County.

Residents were asked to assess their Internet access on speed and customer service. Current speeds are considered inadequate by 84% of subscribers, and 52% of subscribers describe their provider's customer service and support as inadequate. The majority of those dissatisfied with the speed of their Internet connection are using dial-up for access, but dissatisfaction is evident among subscribers of all methods of access.



A majority of dial-up subscribers is interested in moving to a faster-speed service, yet 84% state services are not available to them. Cost is somewhat a limiting factor, as 18% state higher speed services that are available (such as satellite) are too expensive. Dial-up subscribers are currently paying below or slightly above \$20 per month.

Internet access in the home is important to the overwhelming majority of residents; 73% rate access as Very Important and another 15% describe it as Somewhat Important. This importance is quantified as a majority of residents use the Internet to work from home and/or to complete school or job training course work.

Using the Internet for Work or School	
	% of Internet Users
Use the Internet to Work From Home:	34%
Internet Access Required to Complete Coursework for School or Job Training:	58%
Using at least once per Week	67%
Using at least once per Month	33%
	% of Families with Children at Home
Using the Internet to complete school work:	86%

<sup>5</sup> Source: *Over Three-Fourths of U.S. Active Internet Users Connect Via Broadband at Home in November*; Nielsen/NetRatings, 12 December 2006, [http://www.netratings.com/pr/pr\\_061212.pdf](http://www.netratings.com/pr/pr_061212.pdf)



Internet security is a top priority of businesses today. In particular, businesses that allow remote access to the company's network must constantly guard critical company information from attack by unauthorized users. In addition to a firewall, businesses are commonly utilizing a virtual private network (VPN) to grant access and encrypt data. The extra layers of encryption and authentication increase the bandwidth required to pass information to and from the company's server. Remote employees using a dial-up Internet service have a particularly difficult time maintaining a constant connection and experience significant delay in exchanging large data files. As such, dial-up users experience a greater level of frustration than broadband users when trying to work from home. Of all survey respondents, 34% use the Internet to work from home and 29% of their employers require access to the company through a VPN. Dial-up users account for 64% of remote workers using a VPN, and the vast majority state higher speed services are not available to them. Teleworking is a top Virginia initiative aimed at reducing traffic congestion and pollution, and holds the promise of increasing quality of life for workers desiring to live and work in a rural setting. An always-on, high-speed connection to the Internet for rural workers is necessary to enable productivity and an efficient use of time.

The many activities that residents are performing online underscore the high value placed on access, and validate the demand for higher-speed access methods. Email has long been the most frequently used Internet application by citizens of all ages. In more recent years activities such as obtaining directions, making travel reservations, researching purchases, and performing financial transactions have increased in popularity. Activities that influence social and economic changes such as online learning, job search, access to health and medical information and selling products or services online are steadily gaining in popularity as more Americans are exploring the Internet's vast reach. Large majorities of residents are turning to the Internet for access to news and community information.

Surry County residents are actively using a wide variety of Internet applications that increase productivity and provide social and economic benefits. The availability of online courses to improve job skills is one area where public education is needed to educate residents on the benefits and how to access this training option. An additional application that is of *interest* to many but needs some basic education and encouragement to stimulate use is selling products or services online. Given Surry County's significant distance from high-density commercial areas and major transportation routes, e-commerce is critical for enabling rural entrepreneurs to compete with urban businesses.



<b>Residential Online Activities in the Past 6 Months</b>	
<b>Internet Activity</b>	<b>% of All Residents</b>
Purchased products or services	70%
Visited a news website	69%
Searched for travel related info	65%
Searched for health or medical info	65%
Visited a state or local government website	63%
Performed a financial transaction	55%
Researched a major purchase	52%
Searched for info related to school work	44%
Searched for a job	28%
Downloaded or watched video online	26%
Communicated with a teacher	21%
Took an online course	19%
Sold products or services	11%

Wireless Internet access is becoming more widespread, increasing consumer awareness of the service. Where once wireless service could be found only in retail locations such as coffee shops, hotels, airports, and some libraries, wireless wide area networks are becoming more common today. Additionally many new computers (both desktop and laptop) are equipped with standard wireless network cards, enabling ease of use. A large number of consumers have adopted the use of wireless home networks as an alternative method to reach computer work stations, and for using portable devices anywhere in the home. Residents were questioned as to their likelihood of subscribing to an affordable wireless high-speed Internet service if it was available to them, and the response was overwhelmingly positive. While not specifying type of wireless technology or price of services, this question is intended to test the initial perception of wireless as an access option for residential use.

<b>Residents' Interest in Affordable Wireless Internet Access</b>	
Very Likely to Subscribe	79%
Somewhat Likely to Subscribe	11%
Not Likely to Subscribe	10%

**Pay TV Services**

Nationally, approximately 85% of households subscribe to a pay TV service. Cable’s share of the pay TV market as of December, 2006 is estimated at 58.8% according to the National Cable and Telecommunications Association industry statistics<sup>6</sup>. Subscribers located in areas with population densities of 25 homes per mile or less are typically not served by cable systems and therefore are more

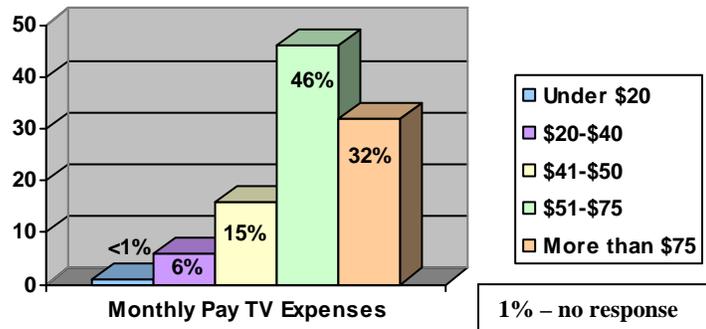
<sup>6</sup> Source: *National Cable and Telecommunications Association*; Cable Industry Statistics, as of December 2006; [www.ncta.com](http://www.ncta.com)



likely to subscribe to satellite services such as DirecTV. County representatives have confirmed cable TV service is non-existent in Surry County. Nearly 4% of the survey group reports subscribing to cable TV; attempts to locate these individuals to confirm their provider was unsuccessful, but addresses of these respondents were located primarily in the Spring Grove and Surry areas. Of the residential survey participants, 22% do not subscribe to a pay TV service. Presumably a portion of these residents are receiving local channels via off-air antennas; the upcoming transition to all-digital signal transmission by television stations by early 2009 will require additional equipment to receive the digital signals or subscription to a pay TV service.

Pay TV Subscribers	
Pay TV Method of Access	% of Responses
Cable	4%
Satellite	74%

The majority of pay TV subscribers currently receive expanded programming consisting of local off-air channels and cable programming. Minimum basic programming consists typically of local off-air channels; public, education and government channels; and shopping networks with perhaps a cable channel such as The Weather Channel. Monthly expenses for Pay TV service are much higher than for Internet access; the majority of subscribers are spending between \$51 and \$75 per month for service.



### Voice Services

Voice communication services include regular wired service (also known as ‘plain old telephone service’ or POTS), cellular, and the newer voice service using the Internet (Voice over Internet Protocol or VoIP) as the transport medium. Nationally, more Americans are dropping regular wired service in favor of one or both of the other services presumably as a way to reduce monthly expenditures. The adoption of VoIP services is an important issue, as currently Universal Service Fees and fees for e911 are not always collected on calls made over the Internet depending upon the provider used. Residential subscriber percentages and monthly rates for voice services are reported as follows:



Voice Communication Methods and Spending						
Voice Service	% With Service	% Without Service	Monthly Expenditure			
			No Charge	Under \$35	\$35 to \$75	More Than \$75
Regular (Wired) (4% unknown)	93%	3%	-	15%	70%	15%
Cellular	88%	12%	-	14%	46%	40%
Voice over Internet	-0-	100%	-	-	-	-

Industry estimates of VoIP penetration vary widely, but analysts do agree that this form of voice communication is expected to increase in popularity at a rapid rate. One of the more aggressive estimates is the prediction that VoIP will be used in 62% of broadband households by 2010<sup>7</sup>. Because of the availability of access at no charge using the Internet only (calls do not ever touch the telephone network) the exact numbers of nation-wide subscribers are not known. Hybrid varieties of VoIP that pass calls using the Internet and then connect to the switched telephone network are becoming more widely adopted as cable and telephone companies roll out new packages of fixed price service for unlimited local and long distance calls. No provider is offering for-fee VoIP services in Surry County at this time.

### 1.6 Overall Residential Satisfaction

Overall, residents in the County are satisfied with their current voice service, but express high levels of dissatisfaction with the video and Internet services available to them. Nearly three quarters of residents are unhappy with the few options available for Internet access; numerous comments echoed frustration with not having a choice of providers for any of the communication technologies – voice, video or broadband Internet.

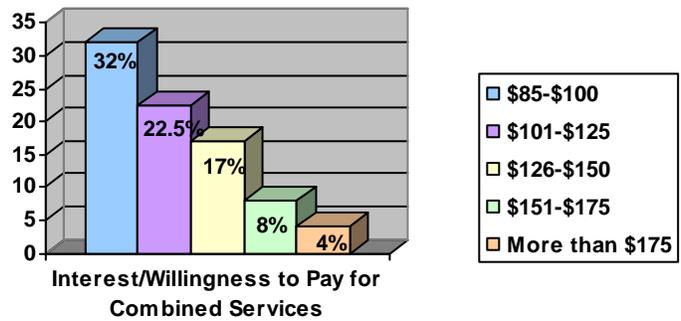
	Satisfaction with Current Providers		
	Internet	Video	Telephone
<b>Satisfied</b>	<b>10%</b>	<b>28%</b>	<b>56%</b>
<b>Not Satisfied</b>	<b>72%</b>	<b>38%</b>	<b>30%</b>
<b>No Opinion</b>	<b>18%</b>	<b>34%</b>	<b>14%</b>

Resident expectation of pricing for services and willingness to pay for improved services from a new provider in the form of a combination package was tested. Just under one-third of residents state a

<sup>7</sup> IDC, subsidiary of International Data Group; *IDC Anticipates 34 Million More Residential VoIP Subscribers in 2010*; Press Release 13 June 2006; <http://www.idc.com/getdoc.jsp?containerId=prUS20211306>



package price of \$85-\$100 per month for voice, video and Internet service is attractive to them. Nationally, cable, telephone and municipal providers have successfully deployed voice services by promoting a combined voice, video and Internet package for approximately \$100 per month. Verizon’s fiber optic



services (marketed as FiOS) recently deployed in the provider’s suburban markets also offer savings for combining three services into one ‘triple-play’ package, priced in the neighborhood of \$100 per month. Only 15% of Surry residents show no initial interest in combining services from one provider.

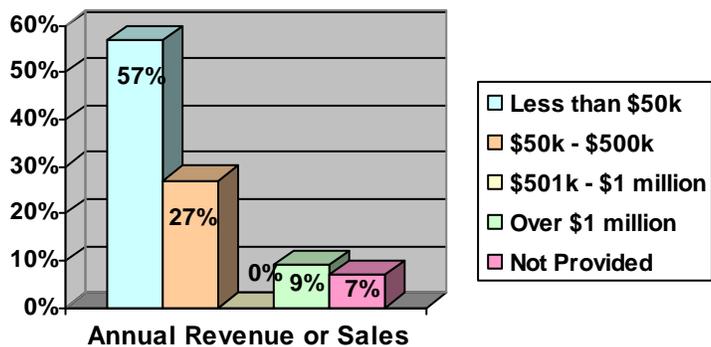
In response to the last survey question “**What changes or improvements to communication technology in Surry County would best meet your needs?**” 63% of the survey participants offered comments. A complete list of the comments is included in the Appendix section of this report. In general, the majority of comments addressed the following issues:

- Desire for high-speed Internet access
- Poor cell phone reception
- Poor off-air TV reception
- High cost of all services
- Desire for bundled service offerings (telephone, Internet, TV, and cell for one price)
- Frustration with limited choice for services and providers

## 1.7 Business Use and Unmet Demand

### Internet Access

Respondents to the business survey are primarily small businesses, employing 1-4 persons with annual revenue or sales of less than \$50k per year. The size and type of responding businesses are represented in [Table 1.7-A](#) on the following page.





**Table 1.7-A: Businesses by Type and Number of Employees**

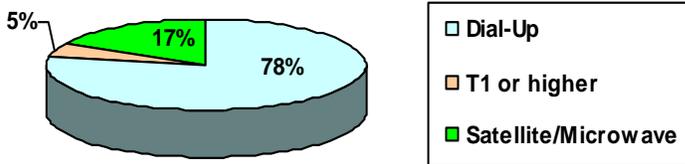
% of Response	Business Type	Number of Employees							Total	
		None	1-4	5-9	10-19	20-49	50-99	100-249		250 or more
7%	Accounting/Architectural/Engineering	1 50%	1 50%							2 4.5%
7%	Agricultural/Forestry/Mining		3 100%							3 7%
22%	Business and Personal Services	2 25%	6 75%							8 18%
5%	Communication/Technology	1 25%	3 75%							4 9%
16%	Contractor or Construction	3 37.5%	4 50%			1 12.5%				8 18%
5%	Education	2 67%		1 33%						3 7%
5%	Finance/Insurance/Real Estate/Law		1 100%							1 2%
5%	Healthcare	1 100%								1 2%
2%	Home Business or Office in Home	1 50%	1 50%							2 4.5%
6%	Non-classified or Other	2 33%	4 67%							6 14%
14%	Retail Trade		3 100%							3 7%
1%	Wholesale Trade		2 67%			1 33%				3 7%
<b>Total:</b>		<b>13 29.5%</b>	<b>28 64%</b>	<b>1 2%</b>	<b>-0- -</b>	<b>2 4.5%</b>	<b>-0- -</b>	<b>-0- -</b>	<b>-0- -</b>	<b>44</b>



The Internet is in use by 93% of all businesses. The vast majority (91%) report 1 to 5 workstations with access to the Internet. Dial-up is the most commonly used method of access by all businesses, and less than one-fourth using services with speeds limited to 1.5 Mbps (T1). DSL and cable modem are not

available currently in Surry County, and no businesses reported using a wireless service. Dial-up access does not meet the needs of 91% of the businesses using this method of access. Connections are too slow and do not provide enough bandwidth.

**Business Method of Internet Access**



The number one reason reported for not subscribing to higher speed access is that higher speed services are not available. The higher speed services that are available are too expensive for 12% of businesses. Users of faster than dial-up services also express some level of dissatisfaction with their current services. While satellite is meeting the needs of the majority of businesses using it, service is reported as unreliable and too expensive. AT&T is the provider of the T1 services used, with pricing for a full T1 (1.5 Mbps) in excess of \$1000 per month. No businesses are using wireless currently.

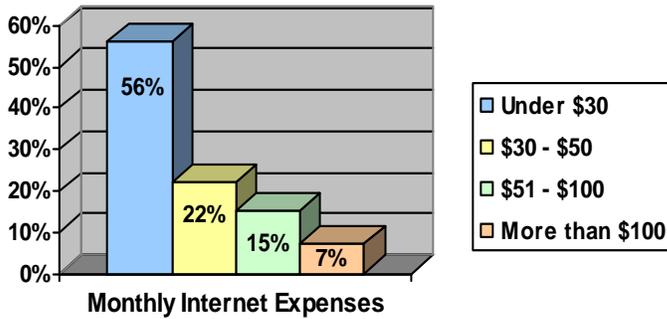
Access to the Internet is considered Very Important or Critical by 59% of businesses. Business end-users are generally unsure as to what speeds or amount of bandwidth they are receiving. Only 2% report subscribing to service at speeds at or above 1.5 Mbps. The majority of businesses overall state their current method of Internet access is inadequate to meet their needs (78%). Only 5% of businesses are very satisfied with their current provider and service.

<b>Satisfaction with Current Providers</b>	
	<b>% of All Internet Users</b>
Very Satisfied	5%
Somewhat Satisfied	17%
Somewhat Dissatisfied	46%
Very Dissatisfied	32%

While the majority of businesses are dissatisfied with the Internet speeds available to them, nearly one-quarter believe the price they are currently paying for service is too expensive. Interestingly, most (70%) of those dissatisfied businesses use dial-up for access and are spending at or above \$30 per month for service. Given the high interest in acquiring faster speeds of access, business frustration with pricing is interpreted as not receiving value for the dollars spent on service.



Dissatisfaction with Current Providers	
	% of All Internet Users
<b>Poor connection speed, not enough bandwidth</b>	<b>80%</b>
Service is unreliable	15%
Price too high	24%
Poor customer service	10%
Problems with Email	10%
Lack of technical support	2%



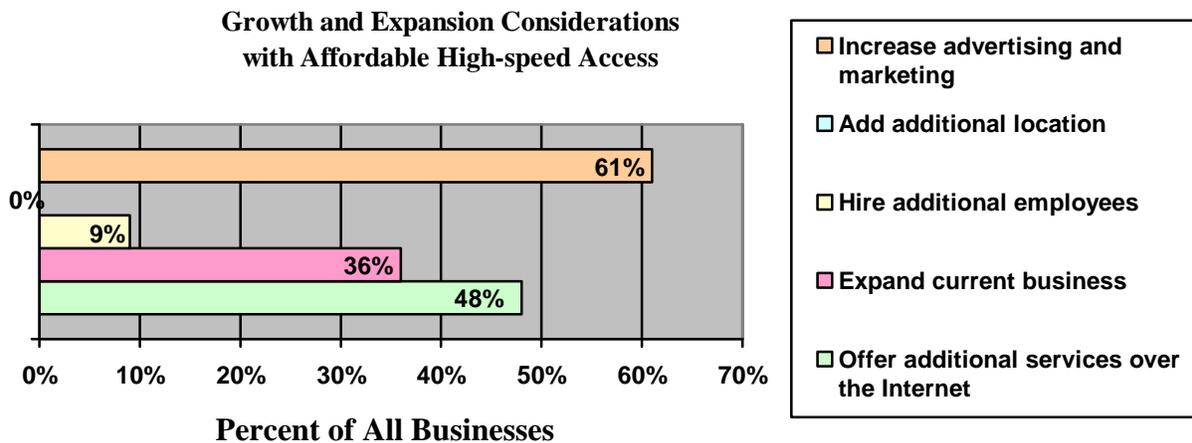
Current monthly expenses for Internet access do not exceed \$50 per month for the majority (78%) of businesses. Only 7% of all businesses report Internet expenses in excess of \$100 per month.

Although nearly all businesses currently have Internet access and consider access important, it appears many businesses are not taking full advantage of all the Internet has to offer. Advertising use is good at 30% or more of all businesses, but only 14% of businesses are conducting online sales. Applications that eliminate rural barriers such as distance learning, online training and video-conferencing are not being fully utilized. Some businesses have incorporated the Internet into the daily operation of the business beyond just communicating with employees and customers through email - tasks such as accounting and banking that can be conducted via online access save the business time and creates efficiency. These efficiencies contribute to the importance of cost-effective and dependable Internet access. Video conferencing and the use of VPNs will utilize more bandwidth than dial-up will support, and the lack of high-speed options in Surry County undoubtedly hinders business adoption of these types of applications, and ultimately impacts the ability of residents to telework. The table that follows illustrates how Surry County businesses are using the Internet – currently and expected future use. The applications targeted for future use and the percentage of businesses that anticipate incorporating these additional uses into their operations are indicators of the incremental speed and bandwidth that will be required in the near future should higher speed options become available to Surry businesses.



How Businesses Are Using the Internet Current and Future Interest		
Internet Use	Current Use %	Anticipated Future Use %
E-Mail	82%	7%
Accounting/Banking	64%	18%
Purchasing materials or services	61%	16%
Research	59%	9%
Customer service	41%	20%
Advertising	34%	32%
Communication between offices	34%	18%
Transferring data files	34%	20%
Distance Learning	23%	23%
Hosting your web site	20%	34%
On-line sales	14%	32%
Training	11%	32%
VPN connections	5%	18%
Video-conferencing	2%	27%
Voice service	2%	25%
Telemedicine	0%	11%

In contrast to lower-than-expected Internet application usage, 77% of all business survey respondents identified one or more growth opportunities their business would consider if an affordable high-speed Internet service were available to them. The high percentage of businesses that would consider offering services over the Internet indicates future growth in e-commerce in Surry County. Additionally, it appears a strong percentage of businesses understand the value of Internet marketing. Growth and expansion opportunities identified are as follows:



Additional opportunities for growth offered include:

- Take on more clients
- Take advantage of more educational experiences



Wireless Internet access has been a rapidly evolving technology with new standards released well ahead of consumer adoption. Until recently, uncertainty existed among consumers as to the security of using this technology to transmit sensitive data. Businesses are beginning to view wireless access as a cost-effective means of connecting branches and accessing the Internet. A majority of all business survey respondents (91%) indicate they are very to somewhat likely to use wireless high-speed Internet access service if it was available to them. Of businesses that state current Internet speeds and bandwidth is inadequate, nearly all are interested in high-speed wireless as an option to meet their bandwidth needs. While not specifying type of wireless technology or price of services, this question is intended to test the initial perception of wireless as an access option for business use.

**Voice Services**

Businesses were surveyed as to the phone services they are using and their monthly expenditure for each. While most businesses maintain regular telephone lines, the majority are spending less than \$100 per month for service. This indicates business customers on average have only one (1) line and a low amount of long distance usage.

<b>Business Voice Communication Methods and Spending</b>					
<b>Voice Service</b>	<b>% With Service</b>	<b>% Without Service</b>	<b>Monthly Expenditure</b>		
			<b>Under \$100</b>	<b>\$100 to \$300</b>	<b>More Than \$300</b>
Regular (Wired)	96%	4%	83%	12%	5%
Cellular	91%	9%	55%	37.5%	7.5%

Business cell phone use is as high in Surry County as in suburban communities where typically 80% or more subscribe to service. Just over one-half are spending less than \$100 per month. End-users provided numerous comments that expressed frustration with poor cellular coverage throughout the County.

The greatest advancement in the use of technology for businesses to date is voice over the Internet (VoIP) phone service. Voice traffic is digitized and transported along with data, greatly reducing per call spending. Incumbent telephone providers realize savings as well, and service is available in suburban markets with broadband access from local and national providers such as Verizon. There are no businesses in Surry County using VoIP today.



Like residential VoIP, service is available in a variety of ways. Service for voice calling using only the Internet and never entering the public switched telephone network (PSTN) is available from national providers such as Skype. High speed service is necessary to maintain a clear and consistent connection. Businesses nationwide are under increasing pressure to reduce monthly spending on voice communication as most are subscribing to mobile (cellular) service in addition to fixed service at the business's physical location. Business adoption of VoIP nationwide is expected to increase exponentially as a method of reducing high communication costs. Service is increasingly becoming available from facilities-based providers offering higher levels of security and support businesses demand. Businesses lacking high speed access in Surry County have no opportunity to utilize new technology to reduce voice expenses.

Interest in purchasing voice and data services from one provider for one 'bundled' package price was tested at various price points. Over one-half of all businesses indicated they would be willing to spend \$100 or less per month for two services. By comparison, nearly the same numbers of businesses indicate they currently spend less than \$30 for Internet access and less than \$100 for regular telephone service per month.

In response to the last survey question **“What changes or improvements to communication technology in Surry County would best meet your needs?”** 66% of the business survey group offered comments. A complete list of the comments is included in the Appendix section of this report. In general, the majority of comments addressed the following issues:

- Desire for increased Internet access speeds, more bandwidth needed
- “Broadband” access specifically requested
- Affordable access options
- DSL or cable modem services desired
- Better cell phone coverage throughout the County

## **1.8 Education and Healthcare Use and Unmet Demand**

When taking steps to make your community attractive to businesses considering relocation options, family quality of life issues will typically weigh-in equally as important as having the right business climate. In addition to recreation and cultural entertainment attractions, two other major considerations are a community's quality of health care and education.



## **Education**

K-12 schools and higher education institutions are eligible to obtain Internet access through NetworkVirginia at state-negotiated rates with local service providers. Surry County public schools (SCPS) are using two (2) T1 lines (1.5 Mbps) for Internet connectivity that is distributed via fiber to the three (3) schools. Bandwidth is allocated between schools on a first come, first served basis. Internal network connections are wired in most schools, with wireless used internally. The cost to increase current data connections to DS3 (45 Mbps) through Verizon is in excess of \$80,000 for installation only.

SCPS has been actively investing in and implementing technology over the past few years. A significant technology investment has been made to equip teachers with tools for presentation and instruction for all grades. Computers are in the classrooms and teachers are actively utilizing technology. Smartboards are in use in some of the classrooms with increased use planned as budgets permit. Students have access to computer stations and labs in the classroom. Students attending Surry County schools today are tomorrow's tech-savvy adults.

Videoconferencing is an optimum use of technology to more adequately allocate teaching time, but uses a greater amount of network bandwidth. Distance learning video programs are available for teachers to use in the classroom, but increased use of these powerful learning tools threaten the availability of precious bandwidth – SCPS works constantly to conserve bandwidth shared between all schools. To date, video conferencing has been utilized primarily for staff development, though opportunities for resource sharing with other high schools through real-time video streaming of classes is available with high bandwidth connections. Teachers are ready to utilize additional technology resources for educating students should the bandwidth become available to them. Surry County schools could greatly leverage learning opportunities through technology with an increase in bandwidth at affordable rates.

As a rural school system, SCPS works diligently to provide higher education opportunities for students. An expansion of the dual-enrollment program at the high school will offer a global studies program that will include Thomas Nelson Community College. These additional programs of study for students will also demand additional research outside of the classroom and high speed access to Internet resources that are currently not available to residents in the County.

Survey response from the Education sector of the business community represented 5% of the survey group. All were small businesses providing education services with less than nine (9) employees; all



were using dial-up for Internet access. Each indicated high-speed services were not available to them, and dissatisfaction with their current providers. Stating that access to the Internet was critical to their business, all were interested in using wireless as an access option if it were available.

### **Healthcare**

Medical facilities within the County consist of private practitioners and the County Health Department. Full service hospitals, medical centers and emergency services are located outside of Surry County in Williamsburg, Petersburg, Hopewell, Suffolk and Newport News.

Healthcare providers represented only 5% of the business survey group with dial-up as the Internet access method that does not meet the critical needs of this segment. Additionally, doctors do not have universal access from their homes as high-speed service beyond satellite is not available in the County.

Advanced applications in telemedicine, the ability to view higher resolution radiology images and the adoption of new technology and applications by the medical center and local health providers will require higher bandwidth access to the region. Rural health services provided by mobile workers would be enhanced by wireless access for mobile terminals on site.

### **Municipal/Public Safety**

The Surry County Government Center currently achieves data connectivity via a 256 Kbps (partial T1) frame relay connection with a 128 Kbps committed information rate (CIR), procured through the State's CovaNet purchasing program. Due to the high cost of acquiring CIR circuit capacity, the network has not been extended to other County facilities such as the Community Center. Additional government facilities located within Surry County - Circuit and District Courts and the Health Department maintain separate facilities and connections to their respective State departments. Currently the County does not offer the ability to offer interactive government services online beyond downloading forms and announcements.

Public safety facilities include the Emergency Operations Center and volunteer fire and rescue stations located in Surry, Dendron and Claremont. Public safety personnel report communication failures during the last hurricane emergency that prohibited outgoing calls. Cell phone coverage in the County is not ubiquitous, limiting calling ability of officers in the field.



Surry County Emergency Management is tasked with planning and response for emergencies at the Surry Nuclear Power Station under the Radiological Emergency Response Plan. Response is coordinated between all first responders in the County and other county agencies as needed. Should an emergency occur at the Power Station that threatens the safety of the public, a reliable telecommunication infrastructure is critical to executing a timely response.

## **1.9 Gap Analysis**

Verizon is the incumbent telecommunications provider in the County, but does not offer DSL service in Surry County. Businesses can subscribe to T1 (1.5 Mbps) services over copper but at prices at or above \$1,000 per month. While dial-up subscribers are located throughout the entire County, the largest concentrations of dissatisfied dial-up subscribers are located primarily from the town of Surry to the eastern County boundary and south to the Dendron area. Satellite is meeting the bandwidth needs currently of most of the businesses using this method, but many describe the service as unreliable. Residents using satellite are very dissatisfied. Numerous comments from both residential and business subscribers indicate a strong demand for DSL service specifically.

Businesses requiring higher speed access immediately account for 78% of survey respondents and 95% of all businesses express some level of dissatisfaction with current providers. Although the majority of business users were unsure as to how much bandwidth they are currently receiving, the greatest amount of frustration is attributed to slow speeds and a lack of bandwidth.

Wireless is currently available from only one provider (380 Communications) and only in Surry. The residents using wireless from this provider are primarily satisfied with the access speed and services. The majority of all residents and businesses are interested in wireless as an access option, even those that state their current connection methods are meeting their needs.

Cable service is not available or widely available in Surry County; cable TV service was reported in some areas around Surry and Spring Grove. Comcast is reportedly the provider in neighboring Prince George County and Charter Communications offers service in Isle of Wight County. The high numbers of satellite subscribers throughout the County provide little incentive for a new cable provider to make network investments beyond high-density areas. Without assistance in accessing capital, it is unlikely the



neighboring cable providers would invest in extending cable infrastructure to reach subscribers in Surry County.

Price will be a limiting factor in decisions to purchase higher speed services. Nearly all users of dial-up services are dissatisfied with slow speeds, but most spend at or below \$20 per month for service. While most state higher speed services are not available to them, 15% stated what high-speed options are available are too expensive. Beyond dial-up, the options available include satellite, perhaps cellular, or T1 - all options that range in cost from as low as \$50 to in excess of \$1,000 per month. Of those businesses that are dissatisfied with current providers and service, 24% cite price as a reason. Of those businesses citing price dissatisfaction, 70% are currently paying approximately \$30 per month for dial-up service. This indicates significant pressure for new broadband access methods at pricing below current service expenditures.

Schools exhibit the greatest bandwidth needs, primarily to access distance learning resources. Current Internet connections are sufficient at this time for basic Internet access, but bandwidth is being conserved. Critical distance learning resources are available to the schools that can not be utilized without an increase in bandwidth.

The public library could benefit from access to affordable higher speed services, both for connecting to the main library circulation system in Courtland and for Internet access for public computers. The library connects to the regional system currently via a T1 frame relay connection, and the bandwidth is strained. Since the library circulation system is accessed through the network connection, staff needs a portion of the bandwidth reserved for their use with the remainder sufficient to support fairly constant use by patrons. Beyond bandwidth for Internet access, the library is in need of updated, faster computers. Current library hours of operation are during normal working hours, with the exception of two nights per week and limited hours on Saturday. The library is not open at all on Sunday. This limits access by patrons who have no computer or Internet access at home, particularly students who need the access to complete school assignments and job seekers. With limited bandwidth, the libraries are not an option for student access to higher education resources available online.

## **1.10 Response mapping**



Many respondents to the residential and business surveys provided their physical address for mapping purposes. Addresses were geocoded and using GIS techniques, responses to various survey questions were overlaid onto the County base map.

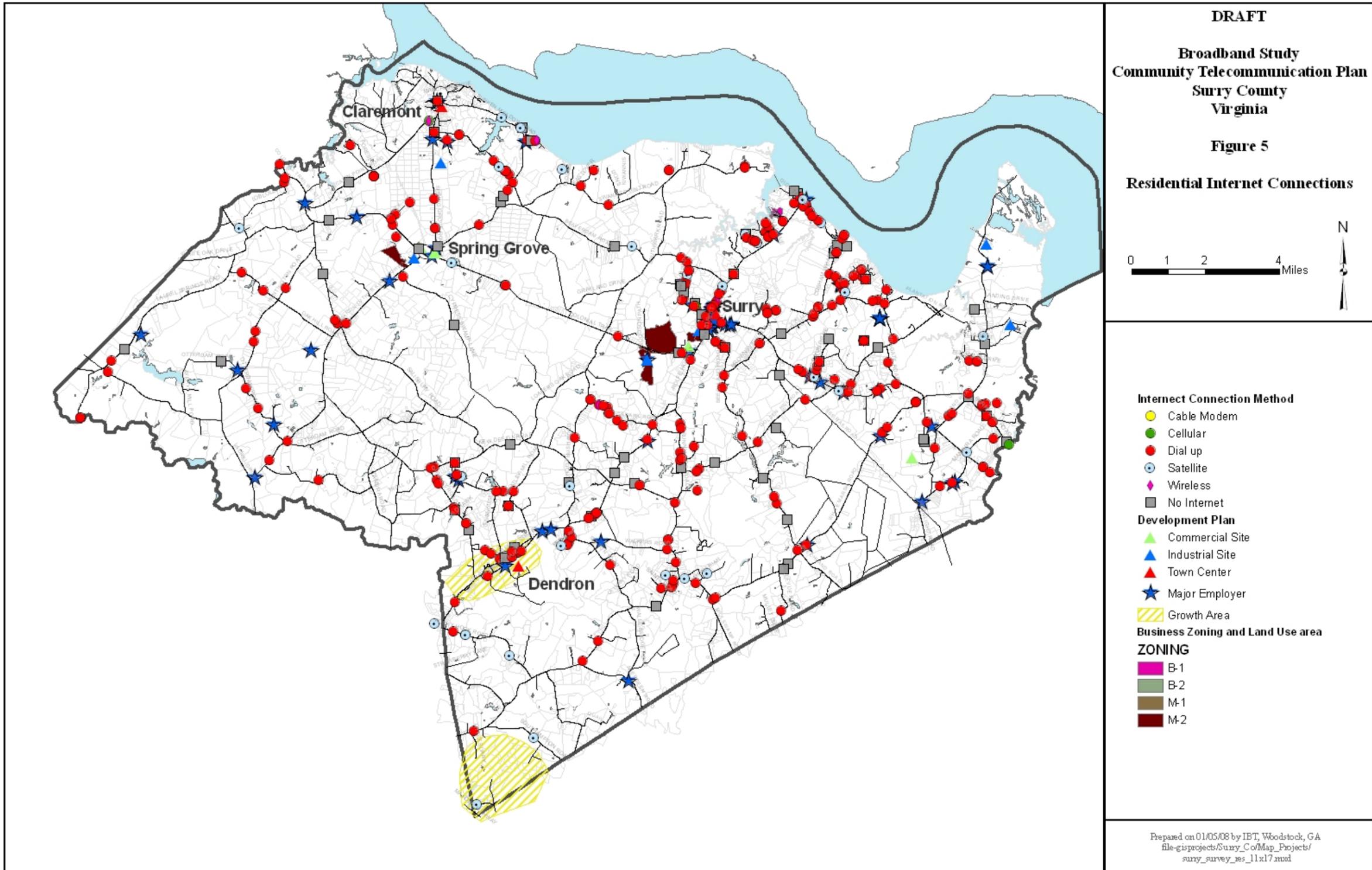
**Figure 5** (page 32) identifies the physical location of all residential survey respondents that provided address information, and their type of Internet connection.

**Figure 6** (page 33) identifies the location of business respondents and methods of access. The large numbers of dial-up subscribers are easily identified in red.

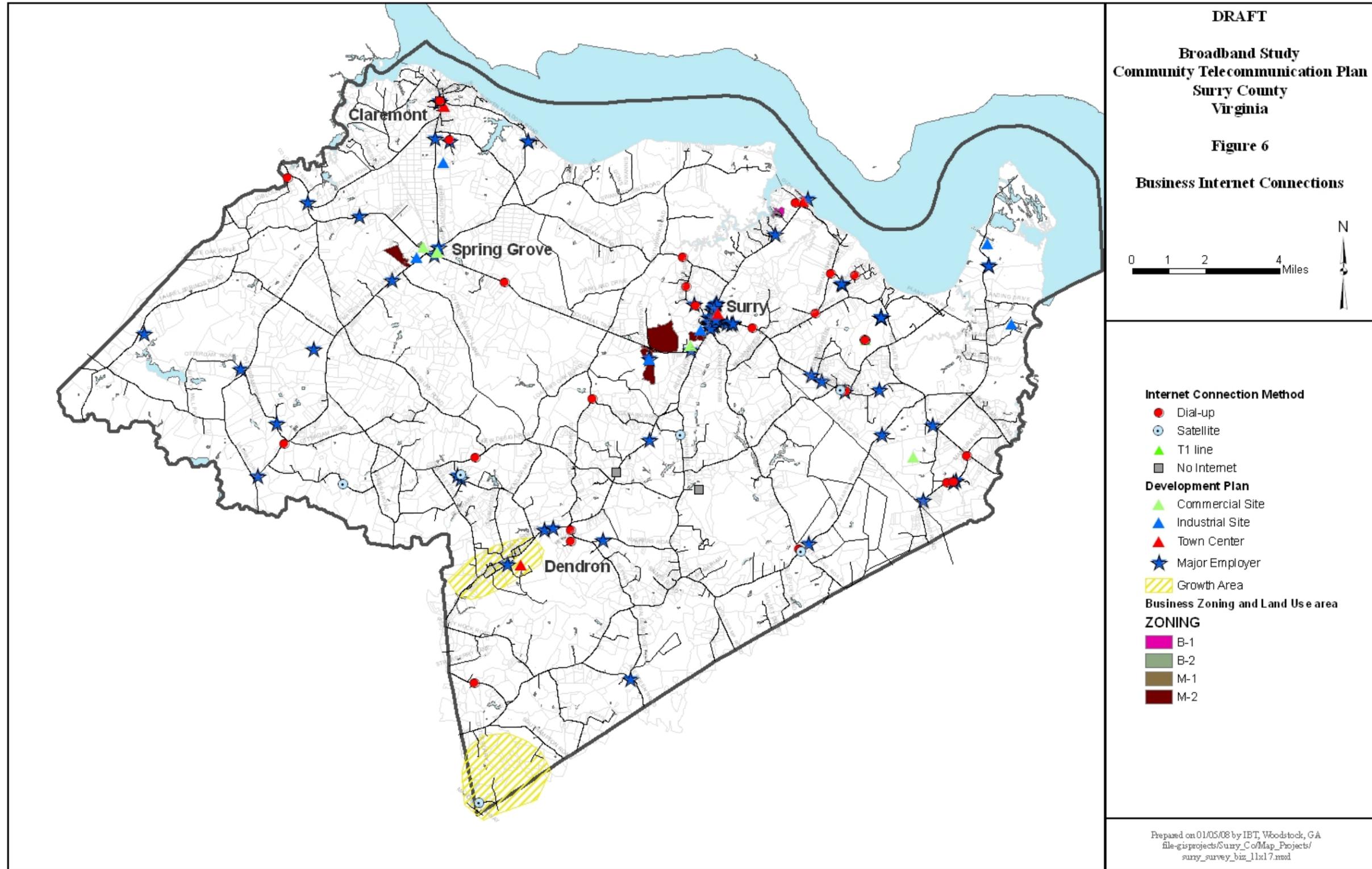
**Figure 7** (page 34) identifies residents using the Internet for school or job training (green squares) or to work from home (gray squares) and those dissatisfied with current services.

**Figure 8** (page 35) depicts the interest in high-speed wireless service by residents and businesses indicating dissatisfaction with current Internet speeds and overall dissatisfaction with the options currently available. Residents and businesses in all parts of the County indicate they are very to somewhat likely to subscribe if service were available.

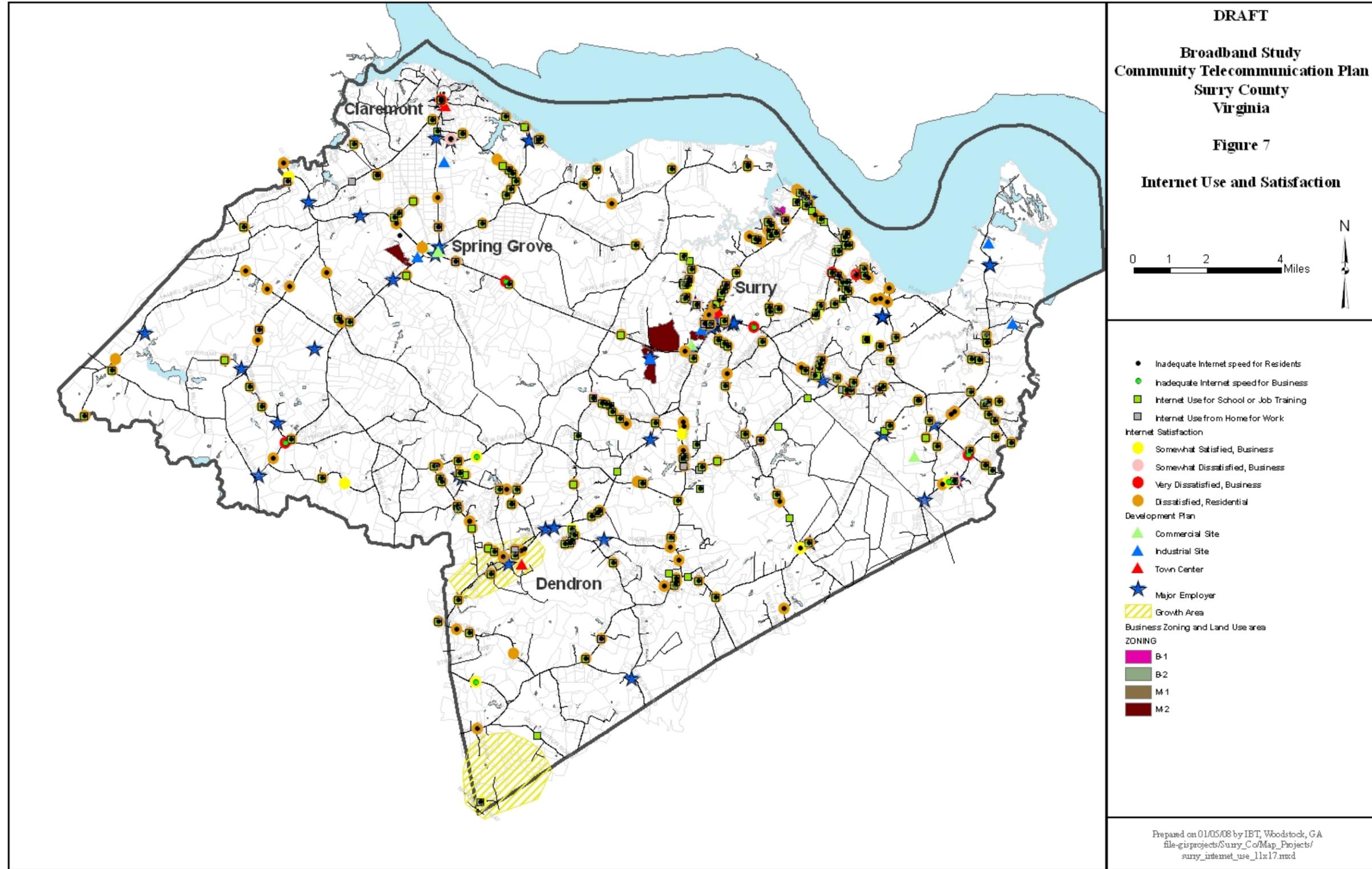
**Figure 5: Residential Internet Connections and Survey Responses**



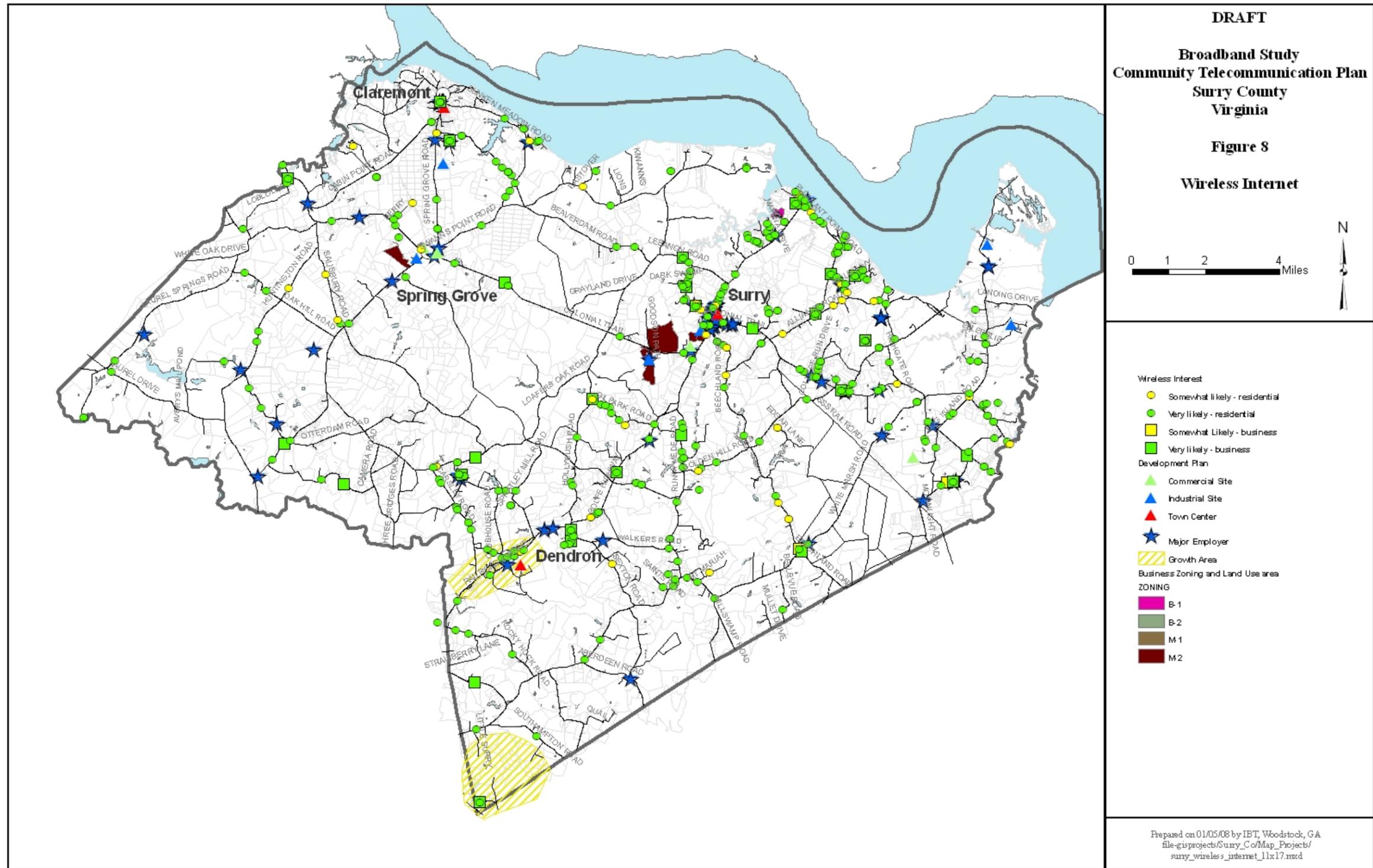
**Figure 6: Business Internet Connections and Survey Responses**



**Figure 7: Internet Use and Satisfaction**



**Figure 8: Wireless Interest**





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## **2.0 Broadband Education and Training**

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### **2.1 Local Technology Training and Resources**

The State of Virginia recognizes the value of reliable, cost-effective high speed communication technology and the resulting impact on economic development and quality of life for Virginia residents. Technology is a focus in all areas of State oversight, and opportunities abound for incorporating technology into the daily lives of citizens. Aside from setting standards for technology use within government, technology training standards are a core education requirement in Virginia public schools. Adults seeking to become proficient in using computers and technology applications have many choices for learning, with flexible programs aimed to reduce potential barriers such as distance, time, and cost.

#### **K-12 Schools**

The Standards of Learning (SOL) for Virginia Public Schools include computer/technology as a core standard, with the goal of producing “Technology Literate” students that “possess technology skills that support learning, personal productivity, decision making, and daily life.”<sup>8</sup> The skills learned during childhood lay the foundation for continuous learning and encourages adoption of new technologies and applications throughout adulthood.

Computer applications and Internet research are introduced early in grammar school years, integrated in all content areas rather than one specific course. Students are tested at various grades to ensure competency. By the end of grade 5, students should understand computer principles and technology, be able to process, store, retrieve, and send electronic information, and communicate using software. By the end of grade 8, students should become more skilled at communication using computer software, networks, and telecommunications; and practice processing, storing, retrieving, and transmitting electronic information. Throughout high school, students are expected to use technology and computer applications to collaborate with peers, express ideas and present work, perform Internet research, and possess an understanding of basic technology operations and concepts. Upon graduation from high school, students will be prepared to enter college or the workforce skilled at using technology for research, problem-solving, decision-making, and communication.

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<sup>8</sup> *Six-Year Educational Technology Plan for Virginia, 2003-2009; Computer/Technology Standards of Learning*



High school students have additional opportunities for study through State and District-approved online classes. Online classes, completed during students' time outside of normal school hours, allow for college-credit courses (Advanced Placement or AP) to be completed prior to graduation for students that have the aptitude for advanced learning. Additionally, some AP classes are available through traditional classroom instruction.

Students have an additional means of receiving advanced education while completing required high school coursework through an attractive dual-enrollment program. John Tyler Community College works with Surry County public schools to offer college-level classes taught at the high school. Students receive both college credit and credit toward high school graduation when they successfully complete the course. This dual enrollment program is being expanded to include global studies through Thomas Nelson Community College. The benefits of these additional courses of study are accompanied by the challenge of increased research and study that require high speed Internet access outside of the schools.

Teachers have access to online courses at home and through the school district providing instruction on implementing technology into classroom learning. Teachers are proficient in basic computer knowledge and classroom applications, and have been provided technology tools for presenting material to students and measuring comprehension. All teachers have completed basic technology instruction courses and could continue to receive further instruction using online resources. A lack of high speed access at home discourages teacher access to distance learning courses to improve skills.

SCPS has invested in computer labs and stations throughout each of the schools. 21<sup>st</sup> century learning tools such as Smartboards are in use by some teachers and students as budgets permit. Students will advance to either higher education or directly into the workforce accustomed to using technology daily.

### **Adult Education**

GED classes are offered at the High School in the evenings. Classes, materials and pre-testing are free to any adult that has not graduated from high school. Online classes and streaming video is available for those unable to attend traditional classes. The PBS LiteracyLink website<sup>9</sup> offers interactive lessons and activities as part of their Pre-GED and GED Connection program. eLearn Virginia is another online option for adults who wish to work towards GED completion, enhance job skills, or earning a Career

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<sup>9</sup> <http://litlink.ket.org/wesged.aspl>



Readiness Certificate<sup>10</sup>. Access to online opportunities to complete diplomas and achieve work skill certification is discouraged by a lack of high speed Internet access.

### **Higher Education**

Education institutions not only design their academic/vocational programs to meet state and industry wide mandates and certifications, but also many higher institutions offer some degree of customized curriculum and internships or apprenticeships to meet local employer needs. It is common for higher education institutions to make an effort to become integrated with the local community, partnering, to some degree, on mutually beneficial initiatives. The higher education partners work with the local school district, providing opportunities for students to receive academic and technical training to ensure an effective transition from high school to college and/or the workplace.

Community colleges located outside of the County in Franklin and in the Richmond area serve Surry County's higher education, workforce preparation and business development needs. Specialized training and certification programs and public/private partnerships for workforce development training through outreach sites are targeted towards industries currently doing business in the region, or identified as target industries for economic development. One objective of such initiatives is to help prevent what is often referred to as "brain drain", the migration of, young people from the area to pursue careers elsewhere. High quality education is a factor along with other quality of life issues influenced by bandwidth availability, considered by young professionals and craftsman when making a decision on where to live and work.

John Tyler Community College (JTCC) located in the Richmond area (Chester, Midlothian) is a partner with the public schools providing opportunities for dual enrollment. JTCC works closely with the schools and business/industry partners to develop technical preparation (Tech Prep) programs of study that will lead students to high paying/high skill careers. The Tech Prep program offered to Surry schools is made possible through a consortium known as the Partnership to Ensure Educational Reform (PEER). High school students following a Tech Prep career pathway may be eligible to earn credit for work completed in high school under the dual enrollment scenario. The Information Systems Technology program at JTCC provides certificate and degree programs, designed to meet the needs of 1) those seeking a degree with specialization and 2) those seeking to improve their skills and advance themselves in the Information Technology field. Information Systems Technology program courses of study focus on Computer

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<sup>10</sup> Program details available online at [www.crc.virginia.gov](http://www.crc.virginia.gov)



Science and Information Technology design, networking, and programming in conjunction with applied mathematics.

Additional higher education facilities in the region include the College of William and Mary in Norfolk, Christopher Newport University in Newport News, ECPI College of Technology in the Newport News/Virginia Beach area, and the Paul D. Camp Community College in Franklin. Each of these facilities offer unique, distance learning programs to accommodate citizens in rural areas and working adults, both credit and non-credit courses for improving job skills and completing degrees. The Virginia Community College System offers an extensive variety of courses available through online access.<sup>11</sup> Distance learning provides the opportunity for students to complete courses not available through traditional instruction at the colleges. Classes are web-based and require independent study. This method requires access to the Internet and basic technology skills such as an understanding of computer fundamentals, web browsing, email use, and use of a word processing application. Old Dominion University offers the added benefit of attending classes remotely through real-time classes streamed via video, but high speed access is a requisite to utilize this method of attending classes.

Two other higher education opportunities in the region include Saint Paul's College and Averett University. Saint Paul's College, located in Lawrenceville (Brunswick County), offers courses of study in the technology fields of Management Information Systems and Computer Science. The continuing studies department of Saint Paul's offers Accelerated Degree Completion Programs at the Lawrenceville campus, in Richmond, and at the Paul D. Camp Community College in the evenings. Technology-related study to earn BS in Business Administration degree includes Management Information Systems and requires computer technology as a prerequisite. In a unique partnership arrangement, Dominion Power has enlisted the resources of Averett University (campus in Danville, VA) to provide Business Administration undergraduate and graduate degree completion classes on-site for Power Station employees. Dominion Power has agreed to expand the program beyond employees-only by providing classroom facilities outside of the main gates in the Surry Nuclear Information Center. While the Averett program does not offer technology-focused areas of study, students will be required to use the Internet for intensive research and access to Averett's complete library online for independent study. High speed access is not required but recommended to ensure students can complete at-home studies and research timely in the accelerated program.

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<sup>11</sup> The Virginia Community College Online Resource for Students, <http://www.vccs.edu/vccsonline/index.html>



Distance learning is critically important for allowing students to complete degree programs, while remaining close to family and work. When students are forced to leave their communities to pursue higher education, many do not return to apply their knowledge locally. The out-migration of young adults reduces a community's ability to maintain a skilled, 'technology-literate' workforce and attract new businesses to the area. The access to advanced learning opportunities provided by the community higher education partners through distance learning would enable Surry County students to get the training and certification they need, while keeping them close to home and saving on education expenses. Surry County Public School graduates should already possess the technology proficiency necessary for online course completion.

There is no higher education satellite facility located in Surry County. Counties that have a higher education facility located in the community report an increase in the numbers of students transitioning from tech and career prep programs to college, and from two-year to four-year degree programs. Students participating in dual enrollment scenarios are graduating high school with a year or more of college completed. Not only does the student gain the advantage of earning a degree at a faster rate, but overall college tuition expenses are reduced as well. Dual enrollment options increase in the number of students transitioning to higher education. Surry County has seen increasing numbers of students transitioning to higher education after high school graduation, and success is credited to the dual-enrollment partnership with the Community College; 89.7% of high school graduates were continuing education in the 2006-2007 school year<sup>12</sup>

### **Workforce Training and Continuing Education**

There are several opportunities for workforce training assistance that is coordinated among the Virginia Department of Labor, the Virginia Community College System, and Surry County public schools. One aspect is apprenticeship related instruction, designed to train and place skilled labor directly into the workforce. Instruction is based on specific trade areas and the courses are developed in cooperation with industry leaders. Specialized curriculums are designed to meet specific needs within the trade as well as meet local employer needs. Apprenticeship related instruction is planned by working directly with sponsoring employers to develop the appropriate academic, technical and core course work for the apprentices<sup>13</sup>.

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<sup>12</sup> Virginia Economic Development Partnership, Surry County profile 2007

<sup>13</sup> Workforce Development Service; see <http://system.vccs.edu/workforce/ari/index.htm>



As part of the Virginia Workforce Network, a Workforce Job Center is located in the Richmond area with a satellite center in Petersburg serving Surry County. The Job Center assists anyone looking for employment, providing a wide variety of resources. Citizens have access to computers with word processing software and Internet access. Staff assists citizens with job search and resume preparation along with focusing efforts on skill development and retraining needs. The Job Center staff provides assistance with basic computer and Internet use, but does not provide technology training classes.

John Tyler Community College and Paul D. Camp Community College are community partners in workforce training. One example of community stakeholders working together is a new pilot program to implement Virginia's Career Readiness Certificate (CRC) program<sup>14</sup>. Virginia's Career Readiness Certificate helps employers by certifying that a recipient possesses core skills in applied math, reading for information, and locating information — skills that are required by at least 85% of all jobs profiled by ACT Workkeys® in the country. This skill assessment will assist individuals in defining what types of jobs they are qualified to apply for, and what additional training is needed to reach higher levels of certification. The Workkeys assessment is recognized by thousands of companies in the U.S. and by state and federal agencies. Upon completion of each level of assessment, the job seeker receives a certificate that assures potential employers of his/her qualifications. Additionally, a Skills Bank is available for employers to search for certificate holders in a given zip code or region.

### **Business Training Resources**

The State of Virginia has numerous resources available to businesses for growing and competing digitally. One-on-one assistance is available from regional agencies such as the Virginia Employment Commission and the Workforce Development Centers in Richmond and Petersburg. Additionally, small/medium businesses and individuals have access to many online resources for e-commerce education and financial assistance through the Virginia Electronic Commerce Technology Center (VECTEC).

Another example of Virginia's pro-business focus is the Virginia Department of Business Assistance (VDBA). This department's goal is to connect businesses with the resources they need to meet challenges and realize market opportunities. "Since almost 99% of Virginia businesses are defined as small and they create the majority of new jobs, there is a special emphasis on building the capacity of

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<sup>14</sup> Program details available online at [www.crc.virginia.gov](http://www.crc.virginia.gov)



these bold entrepreneurs.”<sup>15</sup> The State maintains a resource directory for businesses at [business.virginia.gov](http://business.virginia.gov). Additional resources for technology education and implementation are available from the Virginia Center for Innovative Technology (CIT). CIT’s mission is to accelerate Virginia's next generation of technology and technology companies.

### **Small Business Development Center**

The most comprehensive resource available to Surry businesses is located in Richmond through the Crater Small Business Development Center of Longwood University. VECTEC classes are offered on-site regularly, along with specialized assistance in planning and financing directed towards existing and new businesses. The center offers counseling services, business planning, seminars and training events, and provides information and other services to new and existing small and medium-sized businesses. The SBDC is the best resource for aspiring entrepreneurs to gain knowledge on the requirements for going into business, financial management issues, marketing issues and techniques, business plan development and implementation, and the qualifications for obtaining start-up funds. The center also serves the experienced owner who wants to expand a business, solve business problems, do strategic planning, develop new ideas, enter new markets, or access expansion capital. Seminars aimed at expanding business presence on the Internet include Marketing on the Web and Selling Online.

### **SCORE**

The service corps of retired executives (SCORE) is a non-profit association that aims to mentor to aspiring entrepreneurs and foster the growth of new businesses. Retired executive volunteers present low-cost seminars and free business consulting as a resource partner with the Small Business Administration. One particular seminar is aimed at educating businesses on how to market and sell on the Internet. The nearest SCORE office to Surry County is in Williamsburg at the Chamber of Commerce.<sup>16</sup>

### **Public Library**

Citizens without computers or home Internet access and visitors to the County can access the Internet and several applications at no charge through the public libraries in Claremont and Surry. As a branch of the Blackwater Regional Library, this location connects to the main library in Courtland to access the

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<sup>15</sup> Louisa M. Strayhorn, Director, Virginia Department of Business Assistance, *Connecting Businesses with Resources*; <http://www.dba.state.va.us/about/default.asp>

<sup>16</sup> SCORE; <http://www.williamsburgcc.com/SCORE.html>, [www.score.org](http://www.score.org)



circulation system. Computer stations with Internet access are free for patron use, and each library provides Internet access wirelessly. Station access is being used for many functions. These include leisure activities such as surfing the Internet and email, to more critical job-search related functions such as working on resumes, researching job opportunities, and applying for jobs advertised by national databases such as Monster.com. It is a common practice for companies to require job application submittal only through an online process. Additionally, many students without computers or the Internet at home are relying on the library for access.

Internet access is achieved through a fractional T1 (less than 1.5 Mbps) connection. The Internet access connection is shared between public users and staff access to the library circulation system. The speed and quality of access within the library is subject to several factors: 1) the numbers of users accessing a single Internet connection, 2) the types of applications using the Internet bandwidth, and 3) slow processing capabilities of aging computers. The libraries are not an option for accessing distance learning through video streaming due to the low amount of bandwidth being shared currently. Both branches provide wireless Internet access to users with wireless-enabled laptops or other devices.

Computer classes are not offered at the libraries. Space is a limiting factor along with the ability to fund a training position. Those patrons that do inquire about training classes are interested in basic computer and Internet use, with some requests for instruction on how to sell products over the Internet. Numerous computer and Internet classes are offered regularly at the Williamsburg Public Library for free.

The libraries offer later closing hours only two nights per week (7:00 and 8:00 pm), partial hours and Saturdays and both are closed on Sunday. These hours of operation may be insufficient to accommodate the needs of working families or students.

<b>Claremont Branch</b>					
<b>Mon</b>	<b>Tues</b>	<b>Weds</b>	<b>Thurs</b>	<b>Fri</b>	<b>Sat</b>
9:00 am - 6:00 pm	9:00 am - 1:00 pm	closed	3:00 pm - 7:00 pm	3:00 pm - 7:00 pm	9:00 am - 1:00 pm

<b>Surry Branch</b>					
<b>Mon</b>	<b>Tues</b>	<b>Weds</b>	<b>Thurs</b>	<b>Fri</b>	<b>Sat</b>
9:00 am - 5:00 pm	11:00 am - 8:00 pm	11:00 am - 8:00 pm	9:00 am - 1:00 pm	Closed	9:00 am - 1:00 pm

**Public Safety Education Resources**



APCO (Association of Public Safety Communication Officials) offers extensive training courses for public safety and emergency personnel. Training options consist of traditional instructor-led classes hosted by public safety agencies to online courses and web seminars. Through a partnership with Jacksonville State University and the Institute for Emergency Preparedness, public safety employees can receive certification and degrees without leaving the County. Numerous other training courses are available online through agencies such as FEMA, Department of Homeland Security, US Fire Administration, and the Virginia Department of Emergency Management. To complete online courses, a student need only be skilled with basic computer knowledge to go online and use a web browser such as Internet Explorer. Accessing mission-critical training online seeks to close the preparedness gap between rural and urban public safety entities.

## **2.2 Current and Future Education/Resource Gaps**

### **Training Classes**

There are limited opportunities within the County for acquiring computer and application training. The libraries report some interest expressed by citizens for training on basic computer use, troubleshooting and Microsoft Office applications to improve job skills. Currently, all basic and intermediate training on computer and Internet use is available only through the Community Colleges and in the public schools. Small, community-based training classes would be attractive to older residents who wish to learn to use computers and use the Internet to access valuable resources such as medical information are currently not available.

### **Computer Access**

Currently, free access to computers and the Internet is available at both library branches and at the Community Colleges. Each location has a limited number of computer stations available, and limited bandwidth shared among users. While there are a percentage of citizens coming to these locations that do not have computers or Internet at home, a greater number use the facility for higher speed access and a more enjoyable and efficient use of online time.

### **Help Desk Support**



Residents and small businesses that consider themselves computer literate and are using the Internet are less inclined to seek training on specific applications, knowing enough to ‘get by’. A significant number of both residents and businesses express frustration with service provider customer service. There is a need for a local help desk to provide immediate support for issues that may not require action on the part of service providers. Basic computer troubleshooting and how to determine whether a problem is with software or hardware seem to be the most common questions that need support by more experienced personnel.

A creative example of community support is the Williamsburg Internet Association and the Hampton Roads Internet Association. These local groups provide training and support through volunteers, with the goal of encouraging residents and businesses to get the most out of their Internet experience. Meetings feature training and networking to exchange ideas and share information learned.<sup>17</sup>

### **Computer Equipment**

Income levels vary, and some residents simply cannot afford to purchase computers. While results of the residential market survey show only 2% of families with children do not have a computer in the home, the library reports many students come there to use computers. For these students, free Internet access at a local library or community center is critical. Dial-up Internet access can be obtained for as little as \$9.95 per month if the household receives local telephone service, but the up-front cost of acquiring a computer is prohibitive for many low-income families.

### **Funding**

All local sources contacted for input into this study exhibit an understanding of the necessity of affordable training options and the importance of marketing those options to the community. Nearly all are confined by a lack of available funding resources, but have been successful in leveraging funding for current programs that are meeting identified goals. State and federal grants for technology and workforce development training are currently flowing through higher education partners. The libraries are limited in funding to increase space, purchase new computers, and increase bandwidth.

## **2.3 Broadband Education Development Strategies**

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<sup>17</sup> Williamsburg Internet Association, [www.wia.widomaker.com](http://www.wia.widomaker.com); Hampton Roads Internet Association, [www.hria.org](http://www.hria.org)



## **Higher Education Learning Opportunities**

Communities that have local facilities for higher education and adult continuing education classes typically have a higher percentage of young adults transitioning to college. Community Colleges are critical partners with local schools to provide opportunities, and are eligible for grant funding to assist the community. The lack of a local facility in Surry County makes it more difficult to promote higher education benefits to students and provide affordable and convenient opportunities to improve the community through adult continuing education. Distance learning is ideal for filling the higher education facility gap, but to work optimally requires a reliable, high speed Internet connection. While dial-up access is unsuited for distance learning use, satellite access at somewhat higher bandwidth rates can be used for completing course work that is not delivered as real-time live classes.

## **Computer Refurbishing and Redistribution**

The majority of residents and businesses participating in the end-user surveying process has computers and are using the Internet to some extent. Efforts to develop a technology-literate community should begin very early in the public school system - results of the County needs assessment approximately 2% of families with children do not have a computer at home. Computer donation programs that supply refurbished computers to students should be explored, particularly to reach those with younger school aged children for early intervention. Computers for adults working on GED completion are imperative. Federal computer donation programs should be reviewed<sup>18</sup>, and local drives to encourage large employers to donate computers are suggested. Technical students and retired technology professionals are excellent resources for refurbishing donated computers. Microsoft is a partner in computer refurbishing and redistribution, providing license transfer of Windows software and support. Many computer vendors such as Dell encourage equipment recycling and provide support for redistribution to low-income families and non-profit groups. The States of Maine, Maryland and California have legislatively recouped funds from computer manufacturers to support recycling programs, keeping dangerous elements out of landfills while putting usable computers into the hands of those that can use them.

## **Computer Purchase Program**

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<sup>18</sup> Computers for Learning, EO 12999; <http://www.computers.fed.gov/public/aboutProg.asp>



The City of Quincy, Florida was proactive in assisting families with children to purchase computers. The County School District cited telecommunications as a necessary tool for increasing student scores on State mandated competency tests. Working with the Dell Corporation and a local credit union, the City offered a program whereby families could purchase computers and dial-up Internet access. The NetQuincy purchase program and a Homework Helpline established with the School District enabled parents and students to utilize technology in their own homes. Subsequent Florida Comprehensive Assessment Tests (FCAT) required for graduation, resulted in high pass rates for students who participated in the City's Homework computer lab, proof that the program was achieving its objective. The City of Quincy is currently implementing a fiber optic network throughout the city limits as technology adoption by residents and businesses has resulted in a need for access at broadband speeds.

### **Community Intranet**

In small communities information is commonly communicated by word-of-mouth, followed by radio and newspaper. While this is typical for small towns in years past, it is insufficient for reaching the masses today. A cohesive means of instilling a sense of community and creating a 'connected community' is the use of a community intranet, or portal whereby residents can easily access community information. An example is the current Eastern Shore Portal ([www.easternshorevirginiaportal.com](http://www.easternshorevirginiaportal.com)). It is critical that information is updated frequently. Citizens should be encouraged to utilize the Community Portal as their start page, where they can get instant news and information. Opportunities for training, seminars and workshops should be prominently featured along with upcoming community events. Key to the Community Portal's success are links to the school districts, community health providers, online learning sites, and local businesses, enticing users to explore and frequent the site. In addition, this site should serve as the entrance to Economic Development information vital to those considering the County for a new business location.

The current Surry County website is a great source of local information. An additional feature that is needed is to include business education resources and to help with expanding e-commerce. Marketing is a critical component of the Community Portal's success – locally and beyond.

### **e-Government**



A large number of residents are turning to the Internet for news; in the past six months, 69% have visited a news website and 63% a state or local government site. This represents an opportunity to promote e-government services to citizens, saving time and increasing productivity. The opportunity exists to expand government services online by providing access to forms, online payments when possible, council meeting minutes, and contact information for social services.

### **e-Commerce**

Surry County is located a considerable distance from main transportation routes, resulting in a low flow of commerce from those 'passing through'. It is critical for County businesses to be proactive in marketing their products and services, and the Internet offers a tremendous opportunity to reach those who may never happen upon their business. A community portal would provide a starting point for businesses to begin advertising online, with additional effort aimed at educating businesses on the value of having their own website with a link from the community portal. Home-based businesses should also be included in the business listings on the portal. In this manner, the portal itself operates as a business incubator.

### **Training on Internet Use**

The majority of residents and businesses are using the Internet, but not currently realizing the full advantages the Internet offers. There is sufficient interest among both residents and businesses to support training classes on selling goods and services on the Internet. Training should include hands-on workshops whereby students actually place an item for sale on an online auction such as eBay. Additional training should be aimed at businesses on where and how to market their business online.

Entry level training should be low to no-cost to encourage as many as possible to participate, and to reach as many segments of the population as possible. A critical need is to identify and market Internet resources for online training and job search. In preparation of participating in the Career Readiness Certificate program, residents can complete training online prior to taking assessment tests at the Workforce Development Center and Community College. The resources to advance skills and to find employment should be marketed to County citizens.

### **Lead by Example**



Local businesses that have established websites, are conducting commerce via the Internet, and have embraced technology are the perfect spokespersons for educating others on the advantages of technology. Opportunities for business leaders to assist can be organized by the Chamber of Commerce and promoted through economic development workshops and marketed through a Community Portal. Local networking groups provide support for business success, and additional groups should be encouraged throughout the County. Networking groups are becoming popular in many large cities, especially among young business people who have become accustomed to social networking.

### **Business Investment in Workforce Training**

Local businesses that will take an active role in workforce training are eligible for funding assistance from the Virginia Department of Business Assistance through the Worker Retraining Tax Credit program<sup>19</sup>. The Worker Retraining Tax Credit may be claimed by employers who provide qualifying retraining for their employees through noncredit classes approved by the Virginia Department of Business Assistance (VBDA) or through an apprenticeship agreement approved by the Virginia Apprenticeship Council. For qualified employees who attend Virginia community colleges the employer can claim 30% of all training costs. For those employees who attend private schools, the employer may claim the actual costs up to \$100 per qualified employee. Qualifying apprenticeship programs may include credit and noncredit classes. Businesses qualify for assistance when the retraining of an employee will promote economic development bringing new income into Virginia, stimulates additional employment, improves existing processes, products or services or is the basis for further economic growth.

Current efforts by public school and higher education workforce training partners to engage local businesses in offering apprenticeship opportunities should include marketing the economic development benefits of employee training, and the financial benefits available to employers.

### **The Broadband Experience**

Those who are subscribing to a broadband method of Internet access such as DSL could not imagine going back to slow dial-up. Many residents were first introduced to the Internet at the workplace, and adopted Internet access at home primarily for email communication with family and friends. Many moved beyond simple applications such as email, to transferring digital pictures, and now video. As the

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<sup>19</sup> Source: <http://system.vccs.edu/workforce/WDS/taxcredit.htm> All questions related to the Workforce Retraining Credit should be directed to the Department of Business Assistance [wfs@dba.state.va.us](mailto:wfs@dba.state.va.us) or by calling 804-371-8120



applications continue to evolve and more information becomes easily accessible, a greater value is placed on the speed of the connection.

Municipalities who have led the way by building fiber optic networks in their communities have made kiosks available for their citizens to see, feel and experience 'broadband'. Community venues include city halls, local shopping mall exhibits, chamber of commerce events, and public works buildings. An additional resource for broadband education is available through Virginia's Center for Innovative Technology (CIT). CIT presents a 'Broadband 101 -Untangling the Wires' seminar aimed at educating businesses on the broadband basics, introducing the efficiencies and applications of broadband, and the basics of security and networking. Similar seminars or exhibitions aimed at residents and home-based businesses would be beneficial in providing examples of the power of the Internet.



### 3.0 Appendices

## Appendix A: End-User Surveys

### Residential End-User Survey

Surry County desires to be forward-thinking on behalf of residents, businesses, and those considering a move to our communities. Our goal is to lead in developing economic assets for future growth in the County.

A critical component of economic development is state-of-the-art communication technology. High-speed (broadband) Internet access, digital television programming, and affordable options for telephone service are available today in some areas of our communities. The Surry County Administrator's Office is assisting with a study to determine what services are available in our county and most importantly, what services citizens desire. This study will be used to develop strategies for bringing those services to our communities.

You have been selected to participate in this study. Icon Broadband Technologies (IBT), a private consulting firm, is conducting this survey as part of the communications study. They will collect these questionnaires and compile the data. Your answers are confidential and will be used in a report only as summaries in which no individual's answers can be identified. Only your street address will be used for geographical planning purposes. Your privacy will be respected. The survey should be completed by a head of the household, 18 years of age or older.

Please lend us *your voice* and take part in this study. We realize your time is valuable and sincerely appreciate your assistance. Please take a few minutes to complete this questionnaire. When finished simply drop it in any mailbox. No return postage is necessary. **Time is of the essence and we ask that you return this survey right away.** Your opinion DOES matter - improving our communities is everyone's business. Thank you for your support.

Questions? Contact the Surry County Administrator's office, Planning and Community Development Department at (757) 294-5210  
This survey is also available online at [www.VAruralbroadband.com](http://www.VAruralbroadband.com)

**Residential demographic data** is collected for documenting statistics of the survey pool and to comply with state and federal grant guidelines. Your individual responses will not be shared.

1. Please provide your street address for geographical planning purposes only:  
**Street Address** \_\_\_\_\_ **Zip Code** \_\_\_\_\_

2. What is your age?  
 Under 20    20-24    25-34    35-44  
 45-54    55-59    60-64    65 or Over

3. Do you have children living at home?  
 Yes    No *If yes, please indicate age groups:*  
**3a)**  Under 5    5-17    18 or Over

4. Does your household have a personal computer?    Yes    No

5. Which of the following best describe the type of Internet service you subscribe to at home?  
 No Internet at home    DSL  
 Dial up on telephone line    Satellite  
 Broadband over Powerline    Cellular  
 Cable Modem    ISDN  
 Wireless (from service provider, not home network)

6. What is the name of the company that provides your Internet connection?  
 Not Sure    No Internet Access

7. Please rate your current Internet service on the following two items:  
**7a)** Speed of connection (bandwidth)?  
 Adequate -meets all my needs  
 Inadequate -does not meet my needs  
**7b)** Service and support?  
 Adequate -meets all my needs  
 Inadequate -does not meet my needs

8. To the best of your knowledge, how much are you currently paying per month just for Internet access?  
 No Internet access    \$41-\$60  
 Under \$20    \$61-\$80  
 \$20-\$40    More than \$80

9. How important is Internet access to you or your household?  
 Very Important    Somewhat Important  
 Not Important    No Opinion

10. If you do not subscribe to a high-speed (faster than dial-up) Internet service at home, why not?  
 Not available in my area  
 Too expensive  
 Not interested in this service  
 Using high-speed elsewhere  
 Lack of Internet service set-up support  
 Lack of computer set-up and use support

11. Does anyone in your household use the Internet to work from home?    Yes    No  
*If yes, please answer the following:*  
**11a)** Does your employer utilize a virtual private network (VPN) for your access from home?  
 Yes    No    Don't Know

12. Does anyone in your household use the Internet to complete school assignments or job training course work?  
 Yes, at least once per week  
 Yes, at least once or twice per month  
 No

13. In the past 6 months, which of the following activities have you performed online?  
 Searched for travel related info  
 Searched for health or medical info  
 Purchased products or services  
 Sold products or services  
 visited a news website  
 visited a state or local government website  
 Searched for info related to school work  
 Researched a major purchase  
 Performed a financial transaction with a bank  
 Communicated with a teacher  
 Searched for a job  
 Took an online course  
 Downloaded or watched video online

14. If affordable **wireless** high-speed Internet access was available in your community, how likely would you be to subscribe to this method of Internet access?  
 Very likely    Somewhat likely    Not likely

15. Do you subscribe to a pay TV service?  
 Yes, cable    Yes, satellite  
 No

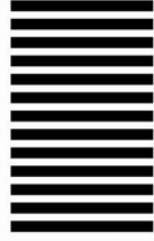
16. To the best of your knowledge, how much are you currently paying for cable or satellite TV each month? *Do not include Internet access fees.*  
 Under \$20    \$20-\$40    \$41-50  
 \$51-\$75    More than \$75    No Pay TV



SURRY COUNTY



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NECESSARY  
IF MAILED  
IN THE  
UNITED STATES



**BUSINESS REPLY MAIL**  
FIRST-CLASS MAIL PERMIT NO. 10 WOODSTOCK GA  
POSTAGE WILL BE PAID BY ADDRESSEE

**ICON BROADBAND TECHNOLOGIES  
6745 BELLS FERRY RD  
WOODSTOCK GA 30189-9905**



**17.** Please indicate the phone service(s) you subscribe to and your total monthly expenses for each:

**a)** Regular telephone (wired):  Yes  No  
 Under \$35  \$35-\$75  More than \$75

**b)** Cell phone:  Yes  No  
 Under \$35  \$35-\$75  More than \$75

**c)** Voice over Internet phone (VoIP):  Yes  No  
 No Charge  Under \$35  \$35 or More

**18.** Thinking about your current communication expenses, how much would you be willing to pay per month for a combination package of high-speed Internet, telephone and pay TV services?  
 \$85-\$100  \$151-\$175  
 \$101-\$125  More than \$175  
 \$126-\$150  Not Interested

**19.** Are you satisfied with the current voice, video and Internet services available to you?

Internet:  Satisfied  Not Satisfied  
Video:  Satisfied  Not Satisfied  
Telephone:  Satisfied  Not Satisfied

**Comments—Suggestions**

**20.** What changes or improvements to communication technology in Surry County would best meet your needs?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Your opinion is very valuable—thank you for your time and support. Please encourage your neighbors, co-workers and local businesses to get involved by completing a survey online at [www.VAruralbroadband.com](http://www.VAruralbroadband.com)

**TO RETURN SURVEY: Simply fold the survey flap to display the return address, tape, and drop it in the mail today. Thank you!**

PRESORT  
FIRST CLASS  
US POSTAGE PAID  
ACWOOD MAILING SERVICE

IBT, On Behalf of the  
Surry County Administrator's Office  
Communication Assessment Survey  
P.O. Box 309  
Woodstock, GA 30189-0309



Business End-User Survey

Surry County desires to be forward-thinking on behalf of residents, businesses, and those considering a move to our communities. Our goal is to lead in developing economic assets for future growth in our County.

We know that as a business owner and operator you understand the value and necessity of cost-effective communication options. To ensure the economic health and vitality of our business community, municipal leaders are working to ensure that the services you need are available and competitively priced. The Surry County Administrator's office is assisting with a study to determine what services are available in our communities and most importantly, what services our businesses need. This study will be used to develop strategies for bringing those services to our communities.

We believe it is important to know what communication services your firm requires to grow and prosper. That is why we are asking for your assistance in a survey of the communication needs of our business community. Your business has been selected to participate in this survey. Icon Broadband Technologies (IBT), a private consulting firm, is conducting this communications survey. IBT will collect these questionnaires and compile the data. Your answers are confidential. No information will be published by name without your permission and the privacy of your firm will be respected. The survey should be completed by the business owner or the person responsible for purchasing communication services for your business. Only your business address will be used for geographical planning purposes.

Please lend us your voice and take part in this business survey. We realize your time is valuable, and sincerely appreciate your assistance. Please take a few minutes to complete this questionnaire. When finished simply drop it in any mailbox. No return postage is necessary. Time is of the essence, and we ask that you complete and return this survey right away. Your opinion DOES matter - improving our communities is everyone's business. Thank you for your support.

Questions? Contact the Surry County Administrator's office, Planning and Community Development Department at (757) 294-5210. Please encourage your neighbors, co-workers and local businesses to get involved! This survey is available online at www.VARurabroadband.com

Business Demographic Data: This data is collected for documenting statistics of the survey pool and to comply with state and federal grant guidelines. Individual responses will not be shared. 1. Please provide your physical address for geographical planning purposes only: Bldg Number & Street Zip Code 2. How many employees work at this location? 3. Which of the following best describes the type of business conducted at this location? 4. What is this location's annual revenue/sales? 5. How many computers at this location have Internet access? 6. How does this location connect to the Internet? 7. What is the name of the company that provides your Internet/bandwidth connection? 8. If you do not subscribe to an Internet service or a high-speed Internet service, why not? 9. To the best of your knowledge, how much are you currently paying per month for Internet access? 10. What is your current Internet bandwidth or connection speed? 11. How important is Internet/bandwidth access to your business? 12. Please rate your current Internet service on the following two items: a) Speed of Connection (bandwidth)? b) Customer Service and Support? 13. How would you describe your overall satisfaction with your current Internet service? 14. What are your reasons for any dissatisfaction with your current Internet service? 15. If an affordable wireless high-speed Internet service were available to you, how likely would you be to utilize this access method for your business needs? 16. If an affordable high-speed Internet service were available to you, which of the following growth and expansion opportunities would your business most likely consider? 17. Thinking of your current communication expenses, how much would you be willing to pay per month for a combination package of high-speed Internet and telephone services?



SURRY COUNTY



NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 10 WOODSTOCK GA
POSTAGE WILL BE PAID BY ADDRESSEE

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6745 BELLS FERRY RD
WOODSTOCK GA 30189-9905



18. For what purpose(s) does this location currently utilize or plan to utilize an Internet connection? Check all that apply.

Table with 4 columns: Purpose, Current Use, Future Use, No Interest. Rows include Accounting and Banking, Advertising/Marketing, Communication with other offices, Customer service, Distance Learning, E-Mail, Hosting your web site, Online sales, Purchasing materials or services, Research, Telemedicine, Training, Transferring data files, Video-conferencing, Voice service, VPN connections.

19. Please indicate the phone service(s) used at this location and your total monthly expenses for each:

- a) Regular telephone (wired): Yes No
Under \$100 \$100-\$300 More than \$300
b) Cell phone: Yes No
Under \$100 \$100-\$300 More than \$300
c) Voice over Internet phone (VoIP): Yes No
No charge Under \$35 \$35-\$45
\$46-\$100 \$101-\$300 Over \$300

20. What changes or improvements to communication technology in Surry County would best meet your needs?

Thank you for your time and support! Please complete and return this survey right away.

TO RETURN SURVEY: Simply fold the survey flap to display the return address, tape and drop it in the mail today. Thank you!

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Surry County Administrator's Office
Communication Assessment Survey
6745 Bells Ferry Road
Woodstock, GA 30189



## Appendix B: End-User Survey Comments

### Residential

#### Response to Survey Question 20 – Comments/Suggestions

**“What changes or improvements to communication technology in Surry County would best meet your needs?”**

1. To have broadband or DSL service available in Surry County.
2. High speed internet and Cable TV.
3. Affordable, reliable, comparable internet service to others areas in VA.
4. Fiber to the home & business
5. Fiber optic to the neighborhood and high speed wireless for the last mile.
6. High speed connection for using computer to work from home.
7. Would like to see low cost broadband service availability throughout County.
8. An affordable high-speed internet service. I'm not one to want all the newest & best electronic technology; but would like to have an internet service that would allow me to take better advantage of the internet. I am a member of an internet musical group that offers clips of any new videos or backstage clips of events, however on a dialup I cannot take advantage of these offers even though I pay a yearly subscription. Just because we are a rural community does not mean that I should not have the same services that other areas have and AT AN AFFORDABLE PRICE.
9. A faster service for internet. We cannot download anything because the service cuts off before the project is completed. Sometimes checking email is a disaster because the "pictures" take too long to download and then my email messages get "clogged" because nothing can bypass the slow moving message. Then I have to use my lunchtime to access the home email and download on another faster service! I have TOO many communications bills. If I could combine services and have the same or better quality - I am sure it would be cheaper for me!
10. Broadband with high-speed service at affordable price
11. WIFI service for internet without the expense of leasing satellite dish. Customer leases but is responsible for repair cost to DirecTV's equipment.
12. HIGH SPEED
13. High speed broadband internet access, fiber optic if possible.
14. ANY improvements!
15. Just faster internet
16. Verizon landline service is substandard, basic options are not available to me, however I am not able to use only digital services. I work from home and its amazing to me that I cannot get phone service that provides voice mail should I be on the phone. Satellite internet does not provide the bandwidth or reliability that I need to perform my job from home. We need reliable phone service and high speed internet in Surry County.
17. BETTER CONNECTION TO THE INTERNET BESIDES DIAL UP.
18. Improved access to the internet. Anything that is a better-quality then dial-up
19. Affordable high speed internet
20. Affordable high speed



21. Wireless
22. To update and become modern
23. Access to high speed internet
24. Wired high speed such as cable modem but would settle for DSL. Wireless has high latency responses but is better than dialup.
25. Wideband internet and decent phone service.
26. Would like to get good cell phone reception everywhere in the county. Would like an option between wired and wireless internet service.
27. BROADBAND SERVICES AND CABLE
28. I'd love to see the land lines upgraded at least so I can at least get a decent dial up speed. Of course DSL would be even nicer.
29. I live in Surry County but address is Waverly Zip 23890. There are many of us with Waverly Addresses who use internet dial-up and would like to have high speed connection - some who do business from home.
30. Broadband internet
31. Just want high-speed internet. These things do not have to be bundled. That would be more expensive for me
32. High speed internet capability and television capability with the speed of COX cable (when it's working)
33. Higher speed internet
34. Faster internet connection & activity
35. Definitely need high-speed internet service!! Please let us know what we can do to MAKE THIS HAPPEN NOW!
36. Faster internet service
37. If I could get cable or DSL internet at home I would not be looking for a new place to live.
38. The changes I would make would be to have wireless high-speed Internet access. I also would like to have access to cable.
39. High speed internet accessibility
40. FIBER OPTIC CAPABILITY - TELEPHONE,INTERNET,TV
41. Faster internet access is vitally important but it needs to be affordable.
42. We need high-speed internet. I feel I waste my money with AOL just because I spend so much time WAITING!!!!
43. Broadband
44. I believe that if Surry County could improve the communication technology not only will it help the parents and elderly but more important it will help the children. Offering a package to residents of Surry County would increase the sales for a single company in a matter of no time at all. DSL, cable TV, Voice over IP would benefit through out the county. I have talked with Verizon before and was given the run around on a time frame of having DSL available in Surry County. I hope that this survey is put to great use; I hope to have affordable and reliable service very soon.
45. We need high speed internet because dial up takes too long.
46. High speed service
47. High speed internet!!
48. Need high speed internet at an affordable price.
49. BROADBAND SERVICES



50. We just need better internet service.
51. Simply provide wireless internet service to my home.
52. To have high speed internet and cable TV. I really don't care for satellite TV but have to have it.
53. Our county desperately needs high speed internet access.
54. DSL
55. High speed Internet that allows for better uploading capabilities.
56. Need high speed internet services
57. High speed internet connection
58. In town in Surry we benefit from having high speed internet hook up
59. Full range of telephone services i.e. call waiting, call forwarding, caller ID, etc; access to high speed internet; and dependable television reception that does not disappear with the wind or rain
60. High speed internet is a necessity in 2007.
61. We need affordable high speed Internet access. We need cable video access.
62. I am currently building a home in Surry and hoping to have internet service when we move in.
63. WHERE EVERYONE CAN GO ON THE INTERNET FOR LESS THEN \$100.00. ALOT OF US JUST CAN'T AFFORD THAT MUCH....
64. High-speed Internet Access
65. High speed, uninterrupted, cabled access.
66. High speed internet
67. HIGH SPEED INTERNET at a reasonable price.
68. Surry needs to provide the following to its residents (these are essentials whether it be for business or personal use) 1. High Speed Internet service 2. more cellular phone towers & 3. cable TV
69. Need High Speed Internet
70. Some sort of broadband access would be great!
71. Some form of broadband (wireless, fiber-optic, or BPL) and cable TV.
72. Introduction or availability of high-speed Internet connection
73. Would like to have the ability to choose. Currently there is no option. Therefore the current provider perceives that there is a monopoly.
74. Cheaper access to phone, cable, and internet service. Faster internet service.
75. High Speed Internet Cable service
76. We really would like to see high speed access. It's a waste of time to do any business online when you can walk away from your computer, have lunch, and come back to see a page just having loaded up. It's ridiculous. All of the city folks just don't understand why it takes us so long to do anything online. My BEST dial-up connection is a mere 24.0 Kbps. How's that for slow?
77. High speed internet
78. Please give us the chance to have high speed internet! I would pay for a package deal that is within reason to this county.
79. High speed internet!
80. All I ask is that Surry County catches up with the current times that we live in.
81. Broadband internet service.
82. Broadband - Yes!



83. Something/anything faster than dial-up
84. DSL - High Speed Internet
85. Improved land line telephone connection Hi Speed Internet Services
86. Anything high speed - we are behind the times and our children are at a disadvantage living in Surry because of it
87. Some kind of High Speed Internet
88. High speed internet for home & cell phone & cable in one package.
89. Broad Band Internet or something faster & more affordable--Cable?
90. Maybe DSL
91. Cable and high speed internet
92. Offer DSL, Cable or wireless
93. I'm connected online @ 12K. I can't email Surry Governmentt. I can't get licenses, fees paid online. Surry is 25 years behind.
94. Need more cell phone transponders in rural area - put cables underground from storms.
95. DSL
96. Flooded out by Isabelle, lost computers-stolen. Also had sat TV; dial up internet. Presently use internet at public libraries; broadcast TV, radio, and DVD/VCR player.
97. Getting Hi Speed should be a top priority with all the different services available thru the internet.
98. DSL and better Verizon services
99. We need "some type" of internet access besides dial-up. It would be a great benefit for all.
100. Cell phone coverage
101. Any improvement would be step in the right direction.
102. Verizon broadband for internet so I could bundle TV, internet & phone & possibly mobile phone as well.
103. Don't know
104. Some type of broadband access
105. Need more than one option for Highspeed Internet
106. High Speed Internet choice of telephone company's cable TV in Surry
107. Because we live in a rural community, a reliable, up-to-date line of communication is necessary, not merely for access to the internet, but more importantly for emergency purposes.
108. It really would be a great improvement if we had high speed internet.
109. DSL in my area would be good
110. DSL Service
111. Combination internet, TV, phone service. Better cell phone coverage.
112. High speed internet DSL We use this for work need to move into the 21st century much needed!
113. Availability of a high speed connection - wireless - is sorely needed!
114. How soon can it be installed?
115. For people to visit each other and communicate with each other, like they use to.
116. Speedy internet access would meet my needs
117. My current cost for these services is much higher than is available in other areas
118. Lower cost
119. Less expensive



120. Having an option
121. A reputable cable service
122. You may need to put up more towers, so that you could get better connections with cell phones. I mean from any company so you can get a signal.
123. Join 21st Century
124. High speed internet (affordable) comprehensive phone service (local calls are "long distance!"
125. Please help us. Why should we suffer some are too high that offer Broad band/Satellite. It not fair - Help Us. Please offer reasonable rates.
126. Cable, high-speed internet service as well as cellular services that work well in all areas.
127. Something reasonably priced & much faster, better, more reliable than dial-up.
128. Want Cox cable - Relocated from Chesapeake, Cox cable provided far better service at a better value.
129. Update phone lines & phone boxes. Offer high speed internet at affordable price--will encourage business growth & higher income/educated residents.
130. Bring Cox Cable here
131. Broad band/voice mail service on home phone.
132. DSL-Broadband connectivity
133. At minimum Verizon DSL would be great.
134. Cable TV & internet or wireless internet
135. High speed - broadband internet services
136. Wireless or Broadband service for internet
137. Provide DSL @ a reasonable cost
138. Fiber optics
139. Get HIGH SPEED Internet, Please!! Can't stress it enough.
140. Package with high speed service.
141. HIGH SPEED, PLEASE!!
142. I would like to see an affordable bundle package: Internet, wire phone & cell. I would also consider adding satellite TV to bundle.
143. Communication Technology for individual household not just for business places.
144. I would like faster, much faster, internet service and better television reception. Satellite is unacceptable during bad weather and at times cell phone calls don't go thru either -
145. Getting high speed internet would great!!
146. High speed internet service
147. DSL
148. High speed internet
149. I would like to see us have access to high speed or broadband internet as I would like to work from house!
150. I like the idea of everything on one bill.
151. High speed internet call waiting ID (not call waiting, already have)
152. Verizon advertises they provide fiber-optic high-speed broadband but it doesn't offer it in our area because of lack of population density in a small area.
153. Affordable high speed internet access
154. High speed internet - expand local calling areas
155. Broadband services.
156. Affordable broadband internet access!



157. Bring Surry into the 20th Century!
158. High speed internet
159. An internet service for around \$35
160. High speed internet
161. High speed internet Broadband
162. Better phone service - 911 outage is not an option! People using dial up are unable to even update their computer - the reason we went with sat. Internet.
163. High speed internet, voice mail, call waiting I.D.
164. Make high-speed internet available in Surry and Claremont. Right now it's not so I have to pay too much for half way decent internet.
165. The most up to date telephone (high speed internet) and satellite or cable T.V. Available for business and personal use for a reasonable price combined in one package or individual.
166. High speed internet Call Waiting - Caller ID cable/Satellite service that works even on rainy days
167. High-speed internet
168. Better internet services - meaning faster & more telephone capabilities.
169. No changes wanted or needed. Installation of the infrastructure would be to intrusive to beautiful rural Surry County.
170. Cable TV high speed internet
171. Broadband Internet Service and telephone service that does not go out every time there is a storm.
172. Hi speed internet. It takes forever waiting for dial-up.
173. New Telephone lines and box in your yard. Please - high speed internet. Better caller plans for long distance rates.
174. Just high-speed internet for now.
175. We really do need high speed Internet in this area.
176. High speed internet
177. I cannot afford high tech devices
178. Verizon needs to improve on technology and quality of service to customers of Surry Co.
179. High speed at a reasonable rate
180. Need Broad Band
181. Fiber Optic lines.
182. Affordable high speed internet! Better cell phone service!
183. Replace copper lines with fiber optic lines.
184. Please! Make high speed internet available to homeowners like me!
185. Broadband needed immediately
186. High speed internet
187. High speed internet
188. Prefer DSL vs wireless. Don't want antenna.
189. Something faster than dial up would be very nice, depending on cost.
190. Better phone service, T.V., & Internet
191. Better care of Verizon Phone Junction Box. Quicker response of Verizon for technical problems.
192. DSL availability
193. High speed internet of some type ASAP!!!!



194. Universal, affordable high speed internet access
195. Affordable high speed internet
196. It would be nice to have affordable high speed internet service.
197. Phone competition and high speed internet other than sat.
198. Claremont needs a cell phone tower. Affordable High speed internet.
199. We do not need to be in the dark ages out here in Surry County.
200. Affordable high speed internet throughout the entire county.
201. DSL or Broadband Internet
202. Broadband service capability.
203. Verizon seems to forget that Surry County is even here. They give us what they want. I would like to see better, faster, service.
204. Telephone, internet, and satellite all in one. Also speed for internet.
205. Library provides high-speed, but bandwidth not adequate. If we had access to wireless, patrons could use wireless, leaving bandwidth for administrative comp.
206. Need high speed internet
207. Establish wireless internet (high-speed)
208. More cell towers. High speed internet. Voice mail on wired phone.
209. A cable company would be the best thing for Surry.
210. Better coverage when it storms.
211. "Anything" would definitely be an improvement!
212. Faster connection.
213. Access to high speed internet & possibly telephone such as Vonage.
214. Availability of non-satellite services - both TV & internet
215. High-speed (broadband) internet access
216. Broadband internet that supports fast paced action video games online. Satellite has severe lag involved.
217. Broadband
218. DSL
219. Get high speed/WiFi here ASAP. This place is growing & we want to telecommute!
220. The availability of high-speed wireless internet.
221. Our county is way behind in providing its citizens with cable & internet.
222. Would like to get on-line more quickly. Direct TV is satisfactory - All phone service is adequate.
223. Get into the 21st Century with Surry Co.
224. Let Surry County come into the 21st Century
225. High speed internet - house located in Dendron Zip Code PLEASE DO IT!
226. High speed internet
227. High speed internet
228. Surry needs to get out of the third world, and get state-of-the-art service here.
229. Verizon needs to have more cell phone towers. Too many dead spots and dropped calls.
230. I would like high-speed internet that is not dial-up & don't have to use a phone line please!!!
231. Wireless highspeed internet a cheaper regular telephone service.
232. Affordability
233. New County Government
234. Hi-speed internet service



235. Broadband
236. DSL
237. To make affordable high-speed internet service available to all citizens of Surry County.
238. Access to high-speed internet service
239. Other internet connection options available besides dial-up or satellite
240. High speed cable service or high speed broadband wireless or phone company DSL service.
241. To be able to use the internet w/out waiting forever for websites to come up. I have wireless on my laptop and I can't even use it in Surry.
242. Broadband
243. High speed internet. Currently do not have it because it is so slow.
244. High speed internet service provided along with cable, and phone service.
245. We need all the progressive up to date services that are currently available to larger communities. We need choices & should not have to settle for anything less.
246. High Bandwidth connection
247. We are moving to a new home in the near future and we need high speed.
248. DSL or high speed internet cable or digital telephone
249. Better internet service be it cable or otherwise
250. Upgrade Everything!!
251. Would like faster internet service, would stick with satellite TV service, would like to change phone company.
252. Need broadband services and new phone lines, these are old and a lot of times we cannot make calls out.
253. High speed internet/broadband absolutely necessary!
254. Making sure each home that wants a computer can afford it. Let high school students build computers and sell them cheaper.
255. High speed internet
256. I would consider a package of internet - video - telephone
257. Would like cable TV. Improve phone service - Verizon Equipment is from the 60's and need updating badly!
258. A phone system that works and high speed internet
259. Need affordable combination package hi speed internet, telephone and pay TV service
260. At least the option/offer. Others can say no. I would like the option of them all. Thank You!
261. DSL would be a wonderful asset
262. Hi speed internet
263. Hi speed internet, a bigger library with more resources
264. Anything would be a great improvement from what is now available.
265. Need cell towers & high speed internet. Dial up takes 5 min to log on.
266. Local telephone calls should include all calls within Surry County. Internet and satellite/cable services should be affordable for all citizens. The connections to these services are inadequate @ peak times.
267. Combine phone, internet & cable
268. Better Verizon Service - DSL or wireless broadband. Verizon is too cheap to upgrade its lines in Surry Co. - not enough profit!!!
269. High speed internet. Digital TV. Telephone service options.



270. Fiber to the providers.
271. The County needs high speed internet for many people that have small businesses that they run from their home.
272. DSL
273. High speed internet at a reasonable price
274. Fiber optic cable for Verizon
275. Would love to have an option or something other than dial up internet. Dial up is my only option and is very slow. We do not have the option of satellite, because that is very expensive. (\$60.00 a month!)
276. Replace copper more modern technology. Hi speed internet at affordable price.
277. High-speed internet. Don't suggest wireless, no faster than dial-up.
278. Internet: Very slow/loose connection a lot. Satellite service is good but very costly. Phone service is ok. I would welcome cheaper service.
279. Better internet access (faster) - dial-up is ineffective for large tasks - Satellite is too expensive.
280. Broadband Cable
281. Free services sometimes, pay for some, one bill for them every once in a while
282. High speed internet access better cell phone service.
283. Cable Service
284. Need to bring Surry into 21st Century!!!
285. Accessible high speed internet
286. More reliable telephone lines/switch gear; high-speed internet not affected by atmospheric weather conditions.
287. Broadband internet access. Get parks & rec in this century.
288. High speed internet, cable TV
289. Would utilize computer more if faster. Not worth my time as it is in this area.
290. Surry needs to come into the 21st Century as to internet & other communications. Hope this survey is not a waste of money & time & ink.
291. Broadband Internet, better satellite service. Better phone systems. Better packages for service.
292. Provide TV, telephone and internet combined with high speed and digital options. COX has a good package in other areas.
293. Higher speed internet
294. High Speed Internet
295. Choices in various high speed access, both for services, plans, and price ranges. Realistic wireless options.
296. High Speed Internet
297. A better cell phone connection would be appreciated
298. High speed (DSL) is needed in this area
299. High speed access for internet
300. We need faster ISP options in Claremont
301. High speed internet
302. High speed, broadband internet system installed in county (cable run)
303. Having wireless internet on DSL
304. To get DSL to this area.
305. High speed dialup



306. Just to have a faster internet speed at a reasonable price
307. Broadband! Need it for work and taking classes.
308. More cell towers, DSL, cable TV. Better notification of government meetings and local events.
309. I went to satellite internet because dial-up was all that was available and it became intolerable- because I work from home my employer pays for it
310. Cable service for TV and computer
311. High speed internet
312. Please install wireless internet - we are desperate here in Spring Grove. We have to travel to Starbucks to use our laptop. PLEASE we are desperate for this technology.
313. We need up to date technology such as cable TV and wireless internet. Dial up is too slow.
314. Internet, really. But a phone that doesn't go down for days in storms would seem to be important for public safety, too.
315. High speed internet
316. We need everything. We are still living as if we are Indians and Settlers. Our communications are so outdated in everything compared to surrounding areas. It is sad and pitiful!
317. Having non-satellite highspeed Internet would be great.
318. They need to update the 294 and 267 exchanges in Surry. NEED HIGH SPEED wireless access like the rest of the world.
319. High speed internet.
320. It would be nice to have cable TV and a quicker internet versus the dial up used now.
321. A combination package of high speed internet, telephone and pay TV services would be great.
322. Verizon should be able to get high speed in Surry County. Then I can have it added to my pre-existing phone bill.
323. Affordable package of internet, phone, and TV would be great
324. There are areas in the county where you can not get a signal for cellular phone use.



## **Business**

### **Response to Survey Question 20 – Comments/Suggestions**

**“What changes or improvements to communication technology in Surry County would best meet your needs?”**

1. Fiber to the business and home.
2. Broadband access made available to all residents at a reasonable rate.
3. Affordable broadband access would be very beneficial
4. Wi-Max proposed international standard
5. Cable or DSL Broadband availability
6. A wireless internet for around \$30 a month.
7. Faster connection speeds would allow me to take on more clients, increase my income
8. Reliable high speed internet is a must for business to efficiently operate in Surry County. That does not exist currently.
9. Broadband services for internet. All cell phones with no drop calls. Better satellite service.
10. High speed DSL connection to allow me to work from home and set up a network with the business. Bring Surry into this century.
11. High speed internet
12. High speed internet with Verizon
13. Hi-speed internet availability and reliable TV reception
14. Just need high speed internet.
15. Broadband
16. High speed internet
17. Affordable internet - high speed
18. Need DSL, broadband, wireless
19. High speed internet
20. High speed internet access at an affordable price.
21. Eliminate dead spots for cell phones in county. High speed internet for \$15/mo.
22. Speed
23. High speed internet, cable options & more telephone options.
24. High speed
25. High speed at a price less than I'm paying for HughesNet.
26. High speed internet download and upload
27. Faster connection
28. More cost effective internet access.
29. System that will allow internet and phone use at the same time.