

**THE BROADBAND AVAILABILITY AND ADOPTION
STRATEGIC PLAN
FOR THE BOOTHEEL REGION**

Developed by
The Bootheel Regional Technology Planning Team

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This Strategic Plan and the recommendations made herein were developed by the members of the Bootheel region RTPT for the benefit of the regional community. MoBroadbandNow provided support for the development of the Strategic Plan, including data collection, analysis, mapping and meeting facilitation, but is not the author of the Plan.

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- 2 – Bootheel Region Planning Process Elements
- 3 – Bootheel Region Residential Community Broadband Survey Results
- 4 – Bootheel Region Business Broadband Survey Results
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INTRODUCTION

PURPOSE OF THE BROADBAND PLANNING EXERCISE

The State of Missouri is in the midst of a transformative effort to expand the reach of affordable, broadband (high-speed internet) access to at least 95% of Missourians by the end of 2014. This effort involves working to enhance broadband access, create public computing centers, develop sustainable broadband adoption efforts, document broadband availability through comprehensive statewide mapping, and enhance Strategic Planning activities throughout the State, to ensure that expanded broadband infrastructure and services will be available to meet the growing needs of citizens, businesses, non-profit organizations, and public institutions.

A critical part of this comprehensive effort is local and regional broadband planning. In line with this, the State has developed 19 regional technology-planning teams (RTPTs), one of which was the Bootheel RTPT. The Bootheel RTPT and the other 18 RTPTs throughout the state have the same overall mission: *to advance broadband demand and adoption, and broadband service and infrastructure availability, within their region.*

The Federal American Recovery and Reinvestment Act (ARRA) passed in 2009 provided funding for the development of broadband infrastructure as well as sustainable broadband adoption efforts, statewide broadband mapping and development of the regional Strategic Plans. Missouri competed aggressively and, as further described below, millions of dollars in stimulus funds are now being used to help meet critical broadband availability and adoption goals. Some of this funding was used to support the efforts of the RTPTs.

Statewide MoBroadbandNow Initiative

MoBroadbandNow was established by Governor Jeremiah W. (Jay) Nixon in 2009 as a public-private initiative to expand and enhance broadband accessibility and adoption. The initiative's first effort was partnering with broadband providers to identify communities that were underserved or unserved with high-speed Internet within the state. Through a competitive award process, funding was secured to design and build new broadband infrastructure. Missouri broadband providers were awarded \$261 million for 19 projects. Including additional cash and in-kind support, the total available is nearly \$325 million.

MoBroadbandNow has seven core objectives including: collecting and verifying data and information; preparing comprehensive state and regional broadband maps; establishing regional technology planning teams; building new, and leveraging existing, relationships with broadband stakeholders; providing technical assistance; tracking the progress of infrastructure projects; and providing transparency and convening public forums and community outreach.

A series of state and regional maps have been produced identifying population density, the number of broadband providers and service coverage, average download speed and geographic topography. There are currently over 100 broadband Internet Service Providers (ISPs) participating in data submissions.

Missourians have already begun reaping the benefits of improved high-speed Internet. In May 2011, Ralls County Electric Cooperative was one of the first American Recovery and Reinvestment Act awarded providers to substantially complete construction and provide service to homes and businesses. Other MoBroadbandNow endorsed projects are underway and more citizens will see faster, reliable connections in the future. Additional data, maps, and broadband information can be found at www.mobroadbandnow.com.

RTPT Process Overview

Consistent with the objectives of MoBroadbandNow, and to ensure a collaborative approach that would represent the diversity of the region, the membership of the RTPT was developed to represent local stakeholders from a variety of different sectors. Within the Bootheel, these sectors included Agriculture, Broadband and Internet Service Providers, Community and Social Services, Economic Development, Energy, Environment, Healthcare, Higher Education, Industrial and Manufacturing, K-12 Education, Library, Local Government, Public Safety, Tourism and Workforce Development.

The process was twofold, with the first half being devoted to the Needs Assessment. It was designed to gather needs, interests, attitudes and opinions concerning broadband access, availability and adoption from a variety of different communities of interest, including: the residential community, the business community at large and the various sectors represented by the RTPT members.

The second part of the process was development of this Strategic Plan (SP or Plan). The RTPT analyzed the findings from the Needs Assessment, conducted a Strengths, Weaknesses, Opportunities and Challenges (SWOC) analysis concerning the findings and then developed this Strategic Plan to enhance and expand broadband infrastructure and service availability and broadband adoption among all the communities of interest within the region.

The RTPTs had many resources available to them to perform the Needs Assessment and prepare the Strategic Plan. These are further detailed in Attachment 1, the Broadband Planning Toolkit.

RTPT members were also involved in two Statewide Broadband Summits that featured nationally renowned speakers providing the latest information on trends in broadband service provision, adoption and utilization. These Summits also enabled RTPT members from different regions to share information and discuss strategies.

The culmination of the Strategic Planning effort has resulted in diverse community sectors, such as education, business, healthcare, government and local broadband and internet service providers, working together to craft and begin to implement the Strategic initiatives and directions detailed in the Plan to advance the broadband climate in the Bootheel region. This plan includes measurable goals, objectives and benchmarks that will help keep this effort on track in ensuing years. Moreover, the regional technology planning process is designed to be enduring, such that the Needs Assessment can be updated over time and the Strategic Plan can remain dynamic and be adjusted and updated based on changing circumstances, technologies, and the results of the implementation efforts proposed herein.

BOOTHEEL REGIONAL OVERVIEW

The Bootheel region is located in the southeast portion of the state of Missouri and is comprised of the following counties: Dunkin, Mississippi, New Madrid, Pemiscot, Scott and Stoddard.

Overall, the region can be best characterized by

A Description of Missouri's Bootheel Region

Missouri's Bootheel is quite distinct from other parts of the state. Composed of the counties of Stoddard, Scott, Mississippi, Dunklin, Pemiscot and New Madrid, the Bootheel is a region of incredibly complex and dynamic geographical, historical and social relationships. The land region with the exception of parts of Scott, Stoddard and Crowley's Ridge in Dunklin County was a large swamp prior to the 1920's. A massive drainage project, through a system of ditches and levees, transformed a forested swamp into one of the most fertile farms regions in the world. The Bootheel Region has been compared to the Nile Valley of Egypt because of the fertility of its alluvial soil deposits. The Bootheel Region is an agricultural based region, as is evidenced by its land use.

Bootheel Agricultural Land Use by County		
County	Land Use by Type	% Coverage in County
Scott	Row Crop-Pasture Land	83%
Stoddard	"	88%
Mississippi	"	90%
New Madrid	"	88%
Pemiscot	"	90%
Dunklin	"	85%

Population has been on the decrease in most Bootheel counties as is evidenced by the 2010 Census.

County	2010 Census Population	% change 2000 to 2010
Scott	39,191	-3.0%
Stoddard	29,968	0.9%
Mississippi	14,358	6.9%
New Madrid	18,956	-4.1%
Pemiscot	18,296	-8.7%
Dunklin	31,953	-3.6%

Approximately 69 % of the Bootheel population is white, 15% black, and the remainder of various ethnic origins. Latest unemployment figures for the Bootheel show the following: Dunklin 10.6%; Mississippi 10.6%; Pemiscot 10.1%; Scott 9.0%; New Madrid 8.9% and Stoddard 8.6%. The overall unemployment figure for southeast Missouri is 8.7%. Bootheel counties vary according to personal income and poverty level. According to census information, 14% of Missouri residents live below the poverty level. Percentages of persons who live below the poverty level in the Bootheel are: New Madrid County 21.1%; Mississippi County 27.6%; Stoddard County 18%; Scott County 18%; Pemiscot County 31.8% and Dunklin County 23.6%. Per capita income for Missouri residents is \$24,724. Figures for Bootheel counties are: Dunklin County \$16,619; Pemiscot County \$15,841; Scott County \$19,566; Stoddard County \$20,911; Mississippi County \$15,927 and New Madrid County \$18,811.

Employment by the top three categories in each county is as follows:

Dunklin County: Government 2000; Retail trade 1881; Accommodation and food services 726.
 Mississippi County: Government 1244; Transportation and warehousing 662; Retail trade 634.
 New Madrid County: Manufacturing 1566; Retail trade 1494; Government 1170.
 Pemiscot County: Government 1976; Retail trade 948; Manufacturing 739
 Scott County: Government 2615; Retail trade 1939; Manufacturing 1911
 Stoddard County: Manufacturing 2689; Government 1685; Retail trade 1545.
 (Government workers are federal civilian, military, state and local government workers)

There is room for economic optimism in the Bootheel and southeast Missouri in general. Gross domestic product rose in the third quarter of 2011. Unemployment is starting to fall; inflation remains modest. Industrial production continues a steady climb, but remains below pre-recession levels.

County Profiles

Additional demographic and economic profiles of the counties in the Bootheel region are shown below in Table 1.

Table 1: Demographic and Economic Profile of Counties in the Bootheel Regional Planning and Economic Development Commission (RPEDC area) (Please see next pages for more information and counties)

Variables	DUNKLIN	MISSISSIPPI	NEW MADRID	PEMISCOT
County Characteristics				
Metro or non-metro county	Non-metro	Non-metro	Non-metro	Non-metro
USDA County Typology: Economic Dependence	Not Specialized	Not Specialized	Manufacturing	Not Specialized

Variables	DUNKLIN	MISSISSIPPI	NEW MADRID	PEMISCOT
USDA County typology: Federal policy types*	LEdu, PPov	Ledu, PPov, PLOSS	Ledu, Ppov, PLOSS	HS,LEdu,LEmp , Ppov,PLOSS
Number of community anchors	70	36	68	52
Population Characteristics				
Total population (% of region's population)	31953 (21%)	14358 (9%)	18956 (12%)	18296 (12%)
Population Density (pop per sq. mile)	59.1	34.9	28.1	37.1
% rural Population	49.60%	37.50%	61.00%	35%
% of households with children (age 18 and under)	28.10%	28%	27.60%	29.40%
Population Characteristics, cont'd				
Median Age	39.3	39.4	40.4	37
% over 65 years	16.50%	15.20%	16.10%	14.70%
Income, Education and employment Indicators				
Median Household Income	\$29,372	\$30,252	\$32,921	\$28,152
Percentage unemployed	10.90%	9.90%	8.90%	10.50%
Population in poverty	27.30%	27.50%	25%	31.30%
Percentage of high school graduates	37.40%	37.80%	39.60%	33.80%
Total Number of Businesses (CBP, 2009)	812	270	398	379
Total Small Businesses	508	156	219	223
Percentage of small businesses (less than 5 employees)	63%	58%	55%	59%
Sector with most number of employee	Healthcare and social services	Healthcare and social services	Retail Trade	Healthcare and social services
Sector with most number of businesses	Retail Trade	Retail Trade	Retail Trade	Retail Trade

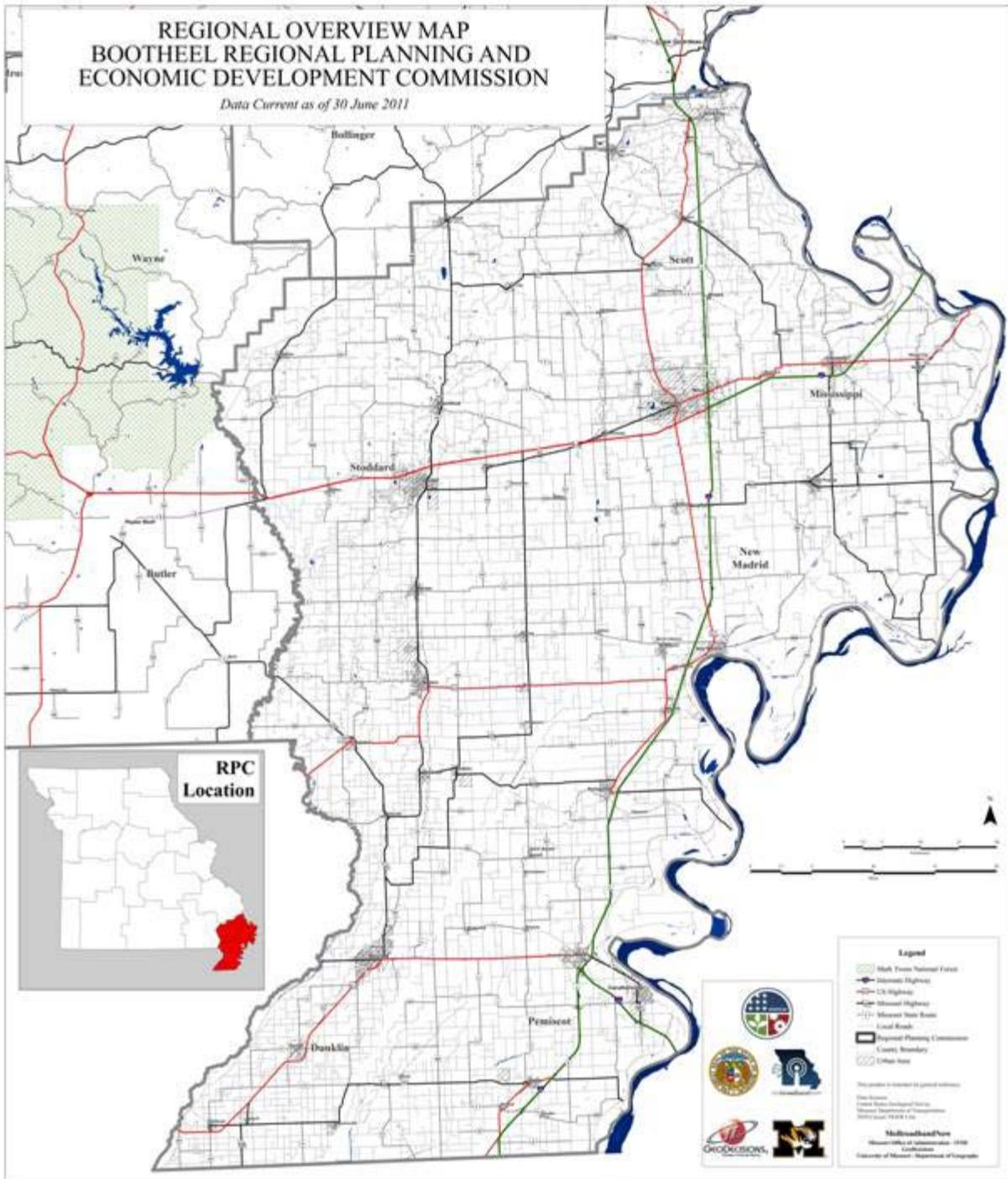
*LEdu =Low education county, LEmp =Low employment county, PPov=Persistent poverty county, PLOSS= Population loss county, HS= Housing Stress county and Ret= Retirement county

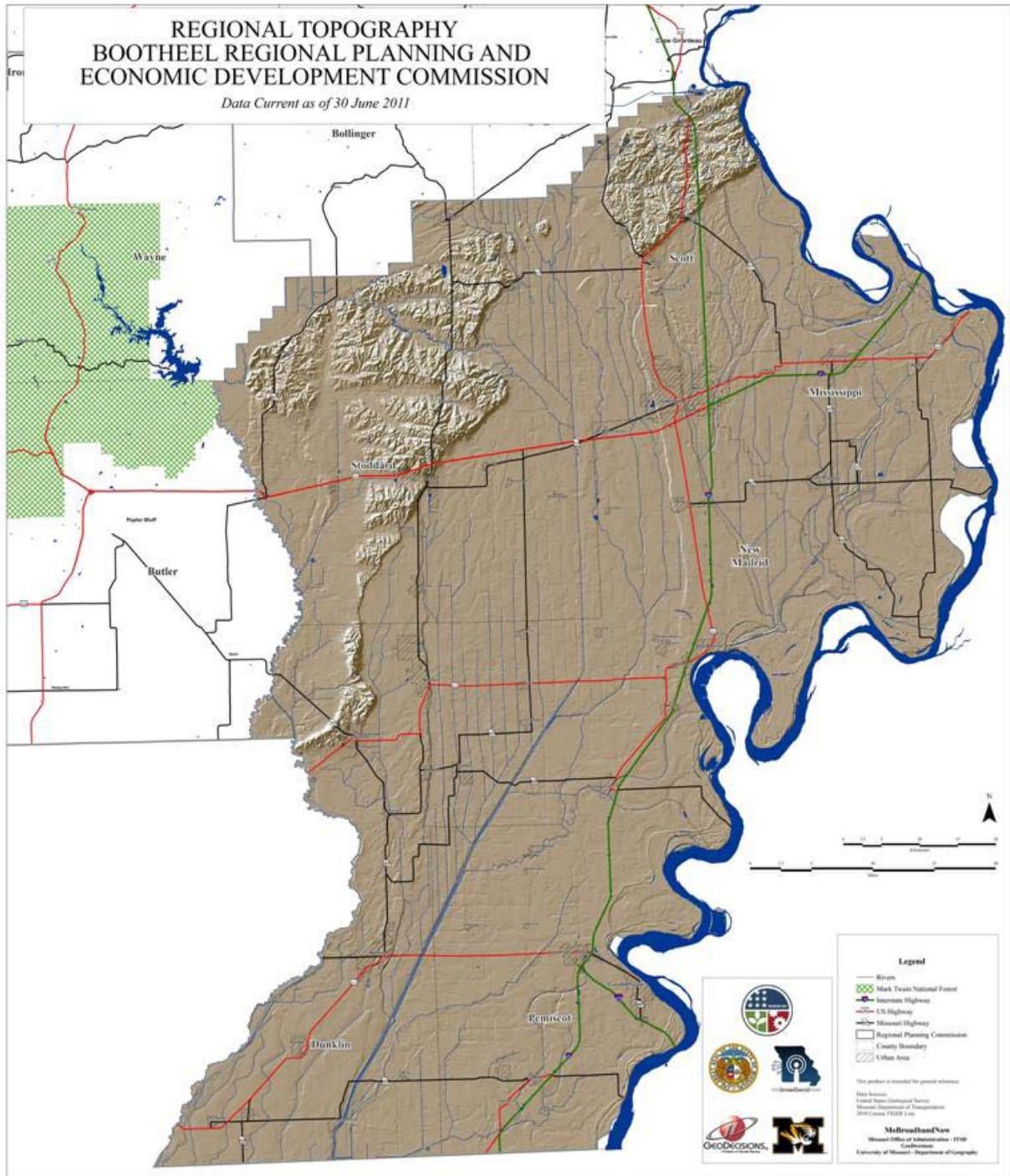
Table 1: Demographic and Economic Profile of Counties in the Bootheel Region (cont'd)
(Please see previous pages for more counties)

Variables	SCOTT	STODDARD
County Characteristics		
Metro or non-metro county	Non-metro	Non-metro
USDA County Typology: Based on Economic Dependence	Not Specialized	Not Specialized
USDA County typology: Federal policy types*	None	None
Number of community anchors	74	63
Population Characteristics		
Total population (% of region's population)	39191 (26%)	29968 (20%)
Population Density (pop per sq. mile)	93.3	36.4
% rural Population	38%	70.70%
% of households with children (age 18 and under)	30.20%	27.40%
Median Age	38.9	41.1
% over 65 years	15.00%	17.80%
Income, Education and employment Indicators		
Median Household Income	\$37,457	\$35,994
Percentage unemployed	9%	9.10%
Population in poverty	18.50%	18.20%
Percentage of high school graduates	42.70%	38.90%
Total Number of Businesses (CBP, 2009)	1108	718
Total Small Businesses	610	430
Percentage of small businesses (less than 5 employees)	55%	60%
Sector with most number of employee	Healthcare and social services	Manufacturing
Sector with most number of businesses	Retail Trade	Retail Trade

Maps of the Bootheel Region

The following maps provide an overview and topography of the Bootheel region.





Highlights of Broadband Activity within the Bootheel Region

Although, as detailed herein, the Bootheel region faces a number of challenges related to broadband infrastructure and service availability and adoption, there is a significant amount of current and projected activity related to broadband deployment in the region. For example, BPS, New Wave, Charter and AT&T Mobility have all indicated to the RTPT that they continue to enhance and expand their broadband services within the region. These and other providers are participants in the broadband availability mapping exercise. The total number of providers within the Bootheel region that are represented on the current state map (<http://mobroadbandnow.com/>) is currently 14. These are listed in Attachment 7. General maps of broadband availability and service levels are included in the next section. Specific information on some current projects is provided below.

Broadband Projects

ATT Mobility recently completed all of its 3G mobile internet upgrades in southeast Missouri.

Little River Cable has recently installed cable, internet and phone service to Wardell and Homestown and has plans to extend cable to Pascola, Bragg City, Gobler, Braggadocio, Tallaposa and Deering in Pemiscot County. Plans are in place to provide cable internet service to 1800 residents of Pemiscot County who presently are not being served. A redundant wireless system will also be in place.

Newwave Communications has made available DOCSIS 3 throughout the Bootheel with 50 Mbps x 3 Mbps and 30 Mbps x 3 Mbps speeds.

KEY NEEDS ASSESSMENT FINDINGS

The Needs Assessment performed by the Bootheel RTPT focused on three major communities of interest as they relate to broadband access, availability and adoption. This included the Residential Community, the Business Community at large, and a wide variety of Institutional, Organizational and Business Sectors evident throughout the region.

Key broadband-related findings from the Needs Assessment are profiled below.

KEY RESIDENTIAL COMMUNITY NEEDS ASSESSMENT FINDINGS

The residential Needs Assessment was conducted largely through a written survey (more detail is provided in the Attachments). The results of the residential survey are categorized into two large areas, consistent with the goals of the planning exercise: broadband and related technology and service adoption; and broadband access and availability. Findings within these two categories are found below.

Broadband and Related Technology and Service Adoption

Respondents were asked a number of questions related to broadband adoption.

Access to Computers

Regarding access to computers, 83% of respondents indicated that they owned a computer. This computer ownership is higher in the Bootheel region than nationally. Additionally, nearly $\frac{3}{4}$ of these respondents have owned a computer for eight or more years, showing long-term adoption.

For the 17% of respondents who do not own a computer, the main reasons, and thus challenges to computer technology adoption are: they don't want or need a computer; they can't afford a computer; or they don't know how to use a computer.

Access to the Internet

Eighty-one percent (81%) of those with computers indicated having internet access at home. The largest percentage of those with internet access has broadband service (types of services are shown below, with additional information in the Attachments) with 26% having broadband for 8 or more years, 38% adopting high-speed internet four to seven

years ago, 24% in the last one to three years and 8% in the last year. This means more than half of all respondents are relatively long-time broadband adopters.

For the 19% of households that do not have internet access, the three main reasons are: cost; they don't own a computer; or private/security concerns.

Type of Internet Service

Those residents that had internet access indicated a variety of different types of internet service with many of them indicating some type of broadband service as shown below.

Table 2: Types of Internet Services Used by Bootheel Households (81% of the total 287 households surveyed reported having internet access)

Type of Service	Survey Response for Bootheel Region	Survey Response for the State
Dial-up	3%	9%
Satellite Internet service	3%	6%
Cable modem	23%	20%
Cellular Broadband (air card)	3%	4%
DSL	40%	37%
Fixed Wireless	4%	7%
Other / Don't Know	5%	5%
Percentage of HHs with Internet Access	81%	88%

(Data source: MoBroadbandNow – Residential Survey, 2011)

Broadband Access and Availability

Review of the residential needs assessment indicates that while most Bootheel residents access the internet utilizing broadband, this leaves approximately 1 out of 10 without access to broadband service. Residential survey respondents noted several reasons for this. The largest of these was cost. Specifically, 27% indicated that they chose their connection type and service provider based on cost. Additionally, in open coded comments, 8% said they needed faster service that was affordable and an additional 10% of those that provided final comments indicated that their primary need was lower cost.

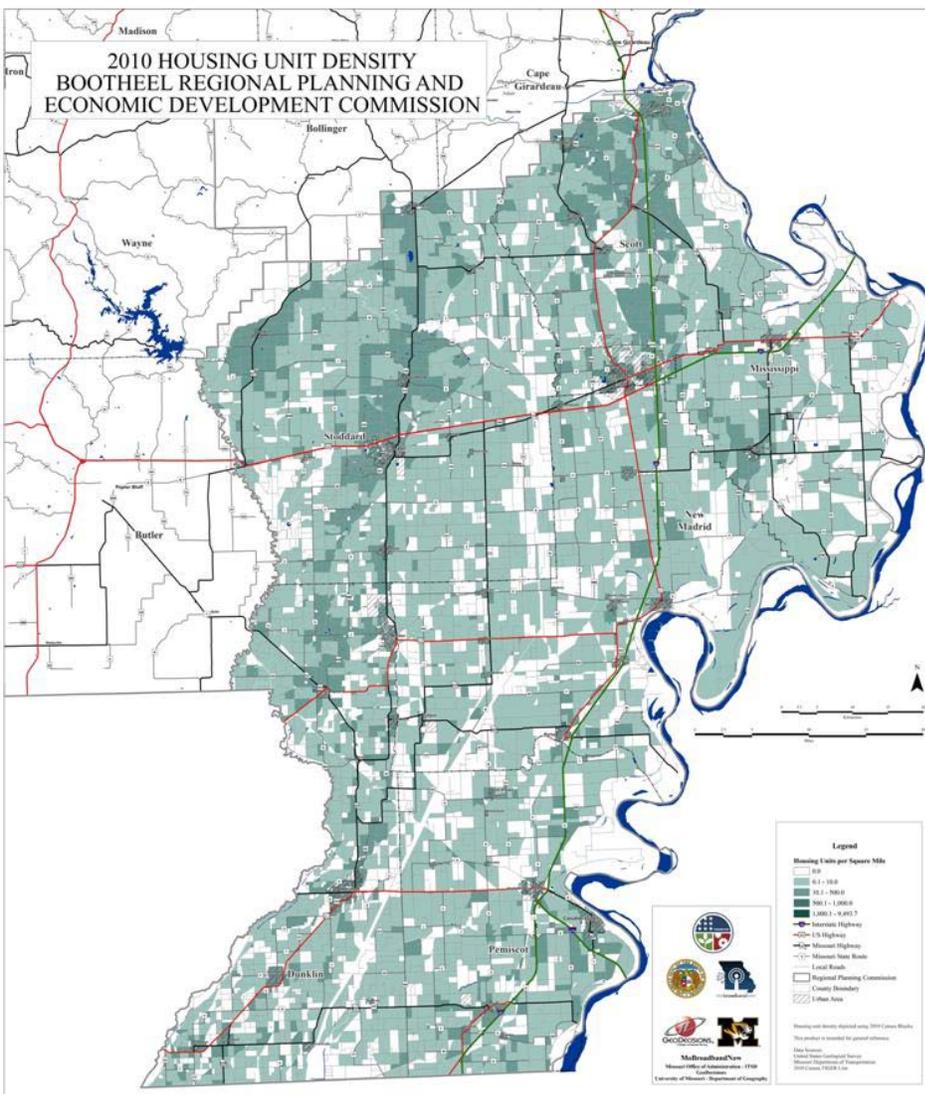
The second reason for lack of broadband is related to a lack of ownership of computers or access to the internet and whether the respondent values either or both of those items. As profiled above, there are a number of residents that don't want or need a computer and then don't access the internet because of the lack of an access device. Additionally, in the Bootheel region, 22% of residents indicated that access to computers and the internet was either somewhat or not at all

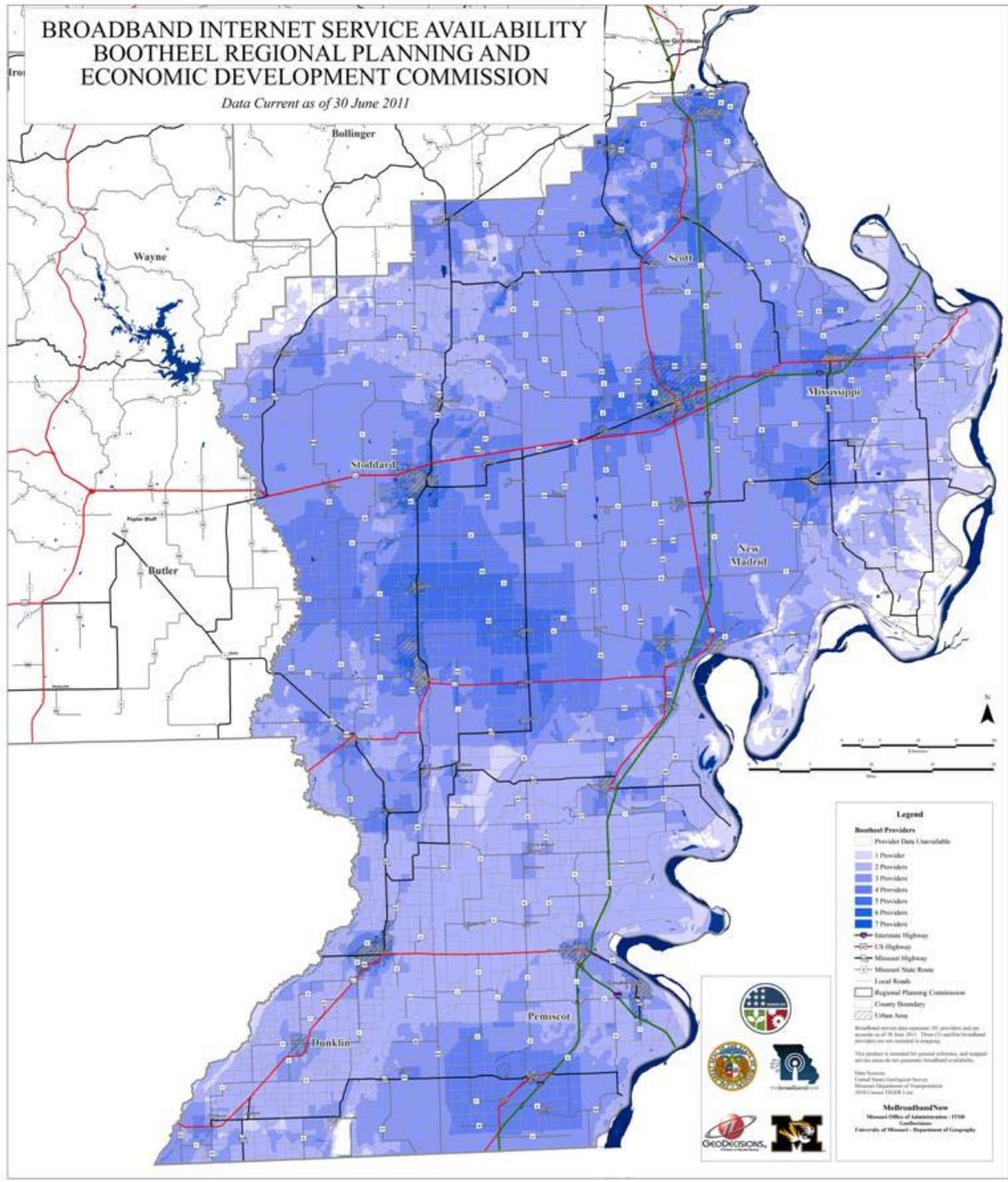
important. Further, 5% of those that made additional comments indicated that internet access is not a necessity.

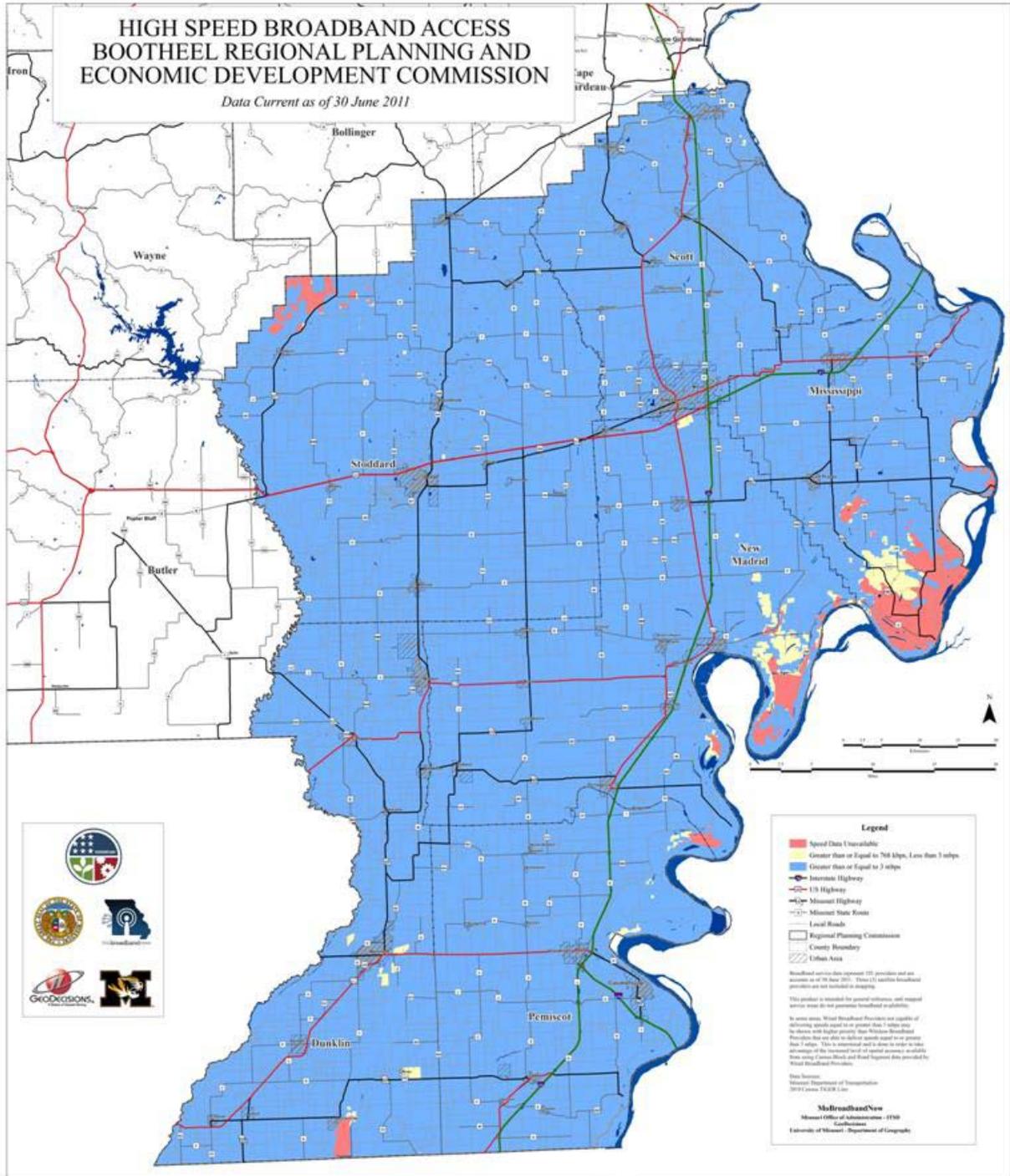
The third most common reason for choosing a type of internet service was availability. Specifically, 15% of survey respondents indicated that the reason that they chose a certain connection type and service provider was because it was the only available service. This was echoed in open coded concerns expressed by survey respondents, where 8% indicated that rural areas need broadband as much as non-rural areas. An additional 8% said that rural areas need improvement when it comes to access to broadband resources in the region.

Broadband Availability-Related Maps

The following maps show housing unit density, broadband service availability and broadband service level availability in the Bootheel region.







Broadband Applications

Those that have access to the internet and broadband indicated a variety of applications and uses, including: a high degree of use of the internet for personal communications, transactions, access to news, health and product information and social networking. These uses are compared with state and national trends in Table 3 below.

Table 3: Internet Use for Various Activities in Bootheel Region as compared to Missouri and U.S. Averages

Activities	Bootheel Region	Rural Missouri	Non-rural Missouri	Missouri Average	National Average (Pew Center)
Keep in touch with family and friends	83%	89%	88%	88%	--
Look for information about a service/ product you are thinking of buying	79%	86%	83%	84%	78%
Look for health or medical information	64%	70%	68%	69%	83%
Buy something online	57%	66%	62%	64%	71%
Look online for news or information about politics	63%	66%	66%	66%	76%
Use an online social networking site like Facebook or LinkedIn	70%	65%	64%	65%	65%
Do any online banking	58%	63%	66%	64%	61%
Visit your state, region or local government's website	44%	46%	42%	44%	67%
Watch television or other videos	46%	40%	49%	44%	71%
Play online video games	41%	34%	36%	35%	36%
Look online for information about a job	33%	33%	30%	31%	56%
Take a class or do homework	24%	24%	20%	22%	--
Work from home (telecommuting)	21%	24%	26%	25%	--
Contribute to a website, blog or other online forum	25%	21%	24%	22%	32%
Look for information about a place to live	21%	20%	20%	20%	39%
Share something online that you created yourself	17%	19%	19%	19%	30%
Operate or support a home-based business	13%	17%	13%	15%	--
Sell something online	11%	17%	14%	15%	15%

(Data source: MoBroadbandNow – Residential Survey, 2011)

BUSINESS COMMUNITY NEEDS ASSESSMENT FINDINGS

To determine the broadband-related needs, interests, attitudes and opinions of the general business community, two main methods were employed: a General Business Community Survey, and individual Business Sector Surveys (economic development, tourism, industrial and manufacturing, etc.)

On-line Business Survey Results

Types of Businesses

The response to the on-line business survey came from a variety of different types of businesses according to their National Business Classification as shown below in Table 4. The large majority were small businesses, consistent with the region's economic profile. More information is available in Attachment 4.

Table 4: Business Survey Responses by NAICs sectors with total businesses by sectors

NAICS	National Business Classification	Percentage of the Total Bootheel Business Survey Respondents in Each Category (n=26)	Percentage of Total Businesses in the Bootheel Region* (N=3,685)
11	Agriculture, Forestry, Fishing and Hunting	0%	0.79%
21	Mining, Quarrying, and Oil and Gas Extraction	0%	0.14%
22	Utilities	5%	0.35%
23	Construction	0%	7.06%
31	Manufacturing	0%	4.02%
42	Wholesale Trade	0%	5.40%
44	Retail Trade	5%	17.91%
48	Transportation and Warehousing	0%	5.62%
51	Information	0%	1.41%
52	Finance and Insurance	32%	7.33%
53	Real Estate and Rental and Leasing	16%	3.39%
54	Professional, Scientific and Technical Services	11%	4.97%
55	Management of companies and enterprises	0%	0.27%
56	Administrative and Support Services	5%	2.39%
61	Educational Services	5%	0.33%
62	Health Care and Social Assistance	16%	11.23%
71	Arts, Entertainment and Recreation	0%	0.98%

NAICS	National Business Classification	Percentage of the Total Bootheel Business Survey Respondents in Each Category (n=26)	Percentage of Total Businesses in the Bootheel Region* (N=3,685)
72	Accommodation and Food Services	0%	6.81%
Other (81 & 99)	Other and not classified	5%	19.62%

(Data source: MoBroadbandNow – Business Survey, 2011)

*County Business Pattern, 2009 (US Census Bureau)

Broadband Service and Technology Adoption

Ninety-two percent (927%) of the Bootheel region business survey respondents reported having internet access. For those that didn't, they either indicated not having a need for internet service or that high-speed internet service wasn't available, but they plan on establishing service when DSL or cable modem service is offered. For those that did, every business has some type of broadband connection (the one caveat could be the 4% that have satellite broadband, which may or may not be a broadband [as defined by the NTIA] connection unless it is a business class link).

Type of Business Internet Connection

The specific types of internet connections are shown in Table 5 below.

Table 5: Types of Business Internet Services Used

Types of Business Internet Connections	Response Percent Bootheel (n=26)	Response Percent Missouri (n=1182)	National Survey* (n=1329)
DSL	50%	38%	57%
T-1	8%	11%	-
Cable Modem	15%	8%	34%
Fiber to the Premises	12%	8%	7%
Fixed Wireless	15%	10%	8%
Satellite Broadband	4%	8%	5%
Mobile Wireless	8%	5%	23%
Dial-up Line - 56 Kbps or Less	0%	8%	8%
Frame Relay/CIR	0%	1%	-

(Data source: MoBroadbandNow, Business Survey, 2011)

(Due to the definition of the types of connections used in the FCC's national level survey, the percentages are an approximate comparison)

*Source: http://transition.fcc.gov/Daily_Releases/Daily_Business/2010/db1129/DA-10-2251A1.pdf

Importance of Broadband among Businesses

Every survey respondent indicated that a high-speed internet connection was very important (87%) or important (13%) to the day-to-day operations of their business. Additionally, 100% indicated that while they currently had broadband, it would be beneficial to their business if broadband in the region were enhanced. The majority of the reasons given for this high response were related to the need for faster speeds, more upload and download bandwidth and more reliable connections.

Regarding importance, a Wordle was developed that provided insight into the top words and phrases described during open coded comments on why broadband was important to the business respondents. As noted below, it is evident from the survey responses that internet access is critical to conducting business.

Why is Broadband Important?



Business Broadband Access and Availability

Broadband Providers in the Bootheel Region

A variety of providers in the Bootheel region provide high-speed internet service to businesses. The top ones listed by survey respondents included AT&T and New Wave. Following these, Charter Business Communications, Kotter, Woodall Wireless, Cosmo Wireless and Verizon Wireless, were all tied at 5% of the business marketplace.

Competitiveness of Commercial Broadband

While a number of different providers serve the Bootheel business broadband marketplace, a significant portion of businesses noted in the survey that only one of them is an option for their business. Specifically 4 in 10 respondents indicate that the business broadband marketplace is not competitive at all (one-provider option), or that there isn't an option suitable for their business.

Broadband Service Ratings

Regarding service characteristics, the largest area of dissatisfaction, 45% of survey respondents, was speed of the connections (echoed in the broadband enhancement response described above). Reliability is also an issue, where dissatisfaction was expressed by 27% of respondents. A majority were satisfied with their cost. The survey results indicated that a majority of business broadband subscribers pay between \$50 and \$100 per month for broadband internet service.

Applications for Business

Regarding broadband usage applications for business, email is the number one application, followed by accessing web sites and then various business-to-business functions, banking, research and file sharing. See Attachment 4 for more detail.

Additional Survey Comments

Overall, businesses that have broadband service need faster speeds, more bandwidth and higher reliability. Specifically, respondents who had additional comments talked about getting more viable service options, more reliable service, more broadband in rural areas and having broadband available not just to the businesses, but to their customers as well.

Key Sector-based Needs Assessment Findings

Institutional, organizational and business sector data concerning the sectors' broadband-related needs, interests, attitudes and opinions, was collected primarily through written and on-line surveys.

Each sector is delineated in Attachment 2 with the methodologies used. The highlights for each sector can be seen in the sector sheets attached as Attachment 5 to this document. Below, the sectors are analyzed collectively and key findings from the sector-based results are arranged into three (3) categories: Broadband Service Adoption, Broadband Infrastructure and Service Availability and Key Applications of Broadband.

Broadband Service Adoption

The major broadband adoption issues for institutional, organizational and business sectors in the Bootheel region are:

- Broadband has been adopted for critical operations by every sector profiled
- The vast majority of sector respondents see a variety of enhancements needed in the future to increase the nature, amount and type of adoption. These include: faster connection speeds, more reliable and more affordable connections and more competition.
- The use of broadband can only fully facilitate service provision within any given sector when it is present throughout the service provision chain (i.e., especially in the Bootheel for community service providers to clients, K-12 schools to students and parents, tourism-oriented business to patrons, etc.). For many of the sectors profiled, there are existing problems in the region with the continuity of the “broadband chain”.
- Where broadband is available but has not been adopted for certain operations or at a higher level, this is primarily due to: the high cost of adding bandwidth and the lack of continuity throughout the broadband service supply chain (i.e., can’t provide a service facilitated by high-capacity broadband, if affordable, high-capacity broadband isn’t available to the end user).
- Additional training, especially on technology, applications and software, is needed for workers, organizations and their clients to effectively use broadband technology
 - In the Bootheel region, this was especially seen for agricultural, healthcare, local government and small business organizations.

Broadband Infrastructure and Service Availability

Although all sectors noted that broadband was available to institutions, organizations and businesses within their sectors, they all noted some type of availability problems. Key availability issues include:

- Lack of access in rural areas, including those just outside of population centers. Rural areas in Scott and Stoddard County were specifically denoted by sector representatives.
- Less than optimal access to often one technology. Sometimes the one technology is “yesterday’s” technology as well.

- Lack of broadband availability was cited as problematic by a number of sectors, including:
 - Agriculture – Lack of fast, affordable broadband availability in some rural areas
 - Community and Social Services – Lack of high-speed access for outreach centers
 - Economic Development – Lack of broadband availability in rural areas in Stoddard County; lack of broadband in some areas that need to expand business recruitment
 - Healthcare – Poor and “spotty” broadband availability in border areas
 - Higher Education – Lack of affordable, high-speed access at satellite campuses
 - K-12 Education - Lack of broadband availability for many students, families and teachers at home
 - Public Safety – Lack of uniform broadband availability for mobile unit connections creates coverage and response issues
 - Tourism – Lack of broadband access at tourism-related locations, sites and businesses
 - Workforce Development – Lack of broadband availability for workers in rural areas
- Lack of competition creates availability problems in meeting the need for either different types of broadband technologies, more advanced technologies or higher speeds and capacity, than those that can be offered by the single provider

Key Sector Applications of Broadband

All sectors report the use of the most common institutional, organizational, and business applications such as a variety of web-site applications, e-mail, on-line, research and other common applications. A variety of other applications are profiled throughout this Plan. Specific additional applications that are important to mention that provide critical information for different sectors include:

- Critical weather and river stage information (Agriculture and Public Safety)
- Training (multiple sectors)
- Product and service provision (multiple sectors)

- Marketing and business to business functions (Agriculture, Economic Development and Tourism)
- Education (Higher Education and K-12 Education)
- Multiple medical applications (Healthcare)
- Providing internet access to the public (Libraries)
- Client communications (multiple sectors)

SWOC FINDINGS AND ANALYSIS

A part of the RTPT's mission in developing a Broadband Strategic Plan for the Bootheel region was to: leverage and build upon existing broadband-related strengths; overcome current weaknesses; effectively address current and future challenges; and take full advantage of current and future broadband opportunities. In order to do this, at its 2nd full in-person meeting, the RTPT engaged in a review of the residential, business and institutional and organizational sector needs assessment data and findings. Based on this, they then performed a strengths, weaknesses, opportunities and challenges (SWOC) analysis. This analysis, fully detailed in Attachment 6, helped identify broadband availability and adoption issues that are considered high priority and ultimately led to the development of the Strategic Directions, Goals, Objectives and Initiatives profiled in the last section of this Plan.

Review and analysis of the feedback from the RTPT members, together with all of the preceding information, resulted in the Bootheel region SWOC analysis overview described below, listing the top 5 in each of the SWOC categories.

BOOTHEEL REGION SWOC ANALYSIS OVERVIEW

The top five (5) strengths, weaknesses, opportunities and challenges as they relate to both broadband availability and adoption are listed below.

Top Five (5) Strengths of the Bootheel Regional Broadband Environment

- 1. There is a substantial broadband user base in the Bootheel region to build upon, including residential, business, and organizational/institutional.**
- 2. The top five (5) vote receiving sectors (Economic Development, K-12 Education, Workforce Development, Healthcare and Higher Education), exhibited significant strengths as both sectors and strong users of broadband. Libraries and Agriculture, as well as other Sectors, were also strong Users and supporters of broadband enhancements.**
- 3. There is a variety of broadband providers in the Bootheel region, enabling a high level of availability.**

- 4. There are many broadband/internet related applications already being well utilized in the Bootheel region.**
- 5. Broadband users rated a number of service and support-oriented aspects of their current broadband providers and services highly.**

Top Five (5) Weaknesses of the Bootheel Regional Broadband Environment

As is seen in many SWOC analyses, some weaknesses run counter to the strengths, especially where there is a large minority expressing problems, issues or concerns. After review of all of the needs assessment data and the SWOC voting by RTPT members, the following are the top five (5) weaknesses related to broadband in the Bootheel region.

- 1. Adoption is an issue throughout the broadband/internet/technology arena. Nearly 2 in 10 households do not have computers; another 2 in 10 do not have internet access, and of those, approximately one in ten Bootheel households do not have broadband service.**
- 2. Many businesses and institutions are highly dissatisfied with connection speed.**
- 3. A number of businesses and institutions indicate the need for more reliable, dependable connections.**
- 4. There is no or limited broadband connectivity to a number of rural areas within the Bootheel region.**
- 5. Consistent with the above, some necessary applications cannot be effectively, efficiently or uniformly implemented when there is a lack of sufficient broadband.**

Top Five (5) Opportunities Concerning the Bootheel Regional Broadband Environment

As strengths are leveraged, and ways and means are devised to overcome the weaknesses, there will be a number of opportunities to advance and enhance broadband availability and adoption within the Bootheel region. The top five (5) opportunities noted during the SWOC analysis for the Bootheel region include the following:

- 1. The vast majority of residents, business and institutions place a high value on internet access and broadband within the Bootheel region.**

2. **Those that have broadband want higher capacity, advanced technology connections.**
3. **There is a great desire for more training to be able to effectively use broadband and related applications.**
4. **A third of residents without internet at home use the internet elsewhere. Focus on getting broadband to these households.**
5. **More affordable, higher capacity broadband equals growth in nearly all sectors.**

Top Five (5) Challenges in the Bootheel Regional Broadband Environment

Similar to weaknesses running counter to strengths, there are multiple challenges to taking advantage of the opportunities listed, as well as leveraging the strengths and overcoming the weaknesses in the Bootheel region. The top five (5) challenges are listed below.

1. **Cost/affordability is a significant inhibitor across the board to expansion in broadband availability and adoption.**
2. **A significant percentage of households do not value computers or broadband and consequently the ancillary services that connect to computers through broadband. Accordingly, Technology/Computer/Internet literacy is a significant need.**
3. **Key sectors, including especially Community Services, Libraries, Healthcare, Higher Education, K-12 Education, Local Government, Public Safety, Tourism and Workforce Development, are seen as facing challenges within the region that impact their ability to provide services, including providing broadband services to others.**
4. **Economic development, business recruitment and future economic growth in the Bootheel region relies heavily on the uniform availability of high capacity, affordable broadband.**
5. **Competition is highly desired by end users. Providers, though, indicate that problematic access to middle mile infrastructure is a significant inhibitor to cost-effective service development.**

STRATEGIC DIRECTIONS

After review of all the findings gleaned from the Bootheel region broadband needs assessment and other associated information concerning broadband availability and adoption in the region, the following are the strategic directions developed by the RTPT to enhance broadband availability and adoption in the Bootheel region. These strategic directions emanate from the need to resolve a number of issues identified during the planning process, as summarized below in the summary of critical findings.

SUMMARY OF CRITICAL FINDINGS

Adoption

There are clear technology, internet access and broadband adoption problems in the Bootheel region, where resources within the region and the State need to be focused. Specifically:

- 17% of households do not own a computer
- 19% of those with computers do not have internet access
- 1 in 10 of those with internet access don't have broadband
- Perceived lack of need is the main reason why households don't own a computer, indicating a lack of value placed on computer ownership. Additionally, 22% of residents feel that broadband is either somewhat or not at all important.
- Cost is a significant barrier, being the number one reason for not having internet access at home, the number two reason for not owning a computer and the top reason concerning the decision on making a choice for broadband service. It also is cited as the top reason why businesses and institutions are unable to upgrade the bandwidth of their current connections.
- Computer/technology literacy is the third most offered reason for not owning a computer. This then further plays into a lack of internet access, because lack of a computer at home is the second most given reason for not having internet access.

- Concerning business respondents, adoption of computers, the internet and broadband is a lesser issue. Rather, business issues are associated primarily with cost, competition and capacity problems.
- Regarding organizational sectors, broadband has been adopted by every sector profiled in the Bootheel region. However, enhancements in broadband adoption are compromised by:
 - Affordability
 - The need for additional training
 - Lack of dependability of connections in a number of cases
 - Lack of uniform availability of connections, which in turn affects lack of continuity throughout the service supply chain

These are the major adoption issues that need to be resolved by developing and implementing short-term, intermediate-term and long-term goals and objectives and associated strategic initiatives.

Availability

The lack of availability is an issue that depresses broadband access and enhancements. Specifically:

- A review of the zip codes provided by those with dial-up and satellite internet access show that they fall largely in areas with the least amount of broadband availability - those that are considered underserved or unserved based on NTIA definitions. Specifically, satellite internet users can be found in the central and eastern parts of Scott County, the northeastern portion of Mississippi County, the central part of New Madrid County and central and southwestern Dunklin County. Similarly, dial-up users can be found in northern Scott County, the eastern and southern part of Stoddard County, western New Madrid County and southeastern Pemiscot County. The data here suggests that some of these users are faced with lack of availability issues, while others may require the lower cost of dial-up.
- A large majority of households with no internet access use internet elsewhere, indicating that they place a significant value on it, but may lack the available speed of connection that they need.

- Uniformly available, high capacity, multiple technology, broadband will help with business recruitment and retention which in turn will contribute to an expansion in economic development.
- Regarding businesses, 45% of business survey respondents were dissatisfied with their connection speed and 100% of respondents indicated that it would be beneficial if broadband in their area was enhanced. This indicates a significant need to increase speed capabilities for businesses.
- Businesses that do not subscribe to broadband would if it were available to them.
- Many business survey respondents find that the broadband climate needs to be more competitive in order to provide the enhancements that they seek.
- Regarding institutions, organizations and businesses within varying sectors, they indicate significant infrastructure and service availability needs and issues, including:
 - Lack of competition is creating availability problems in meeting the need for either different types of technologies or higher speeds and capacity. In other words, they need enhancements beyond the basic broadband climate.
 - There is a significant lack of access in rural areas, especially in Scott and Stoddard Counties, including those just outside of population centers.
 - There is a lack of broadband availability in critical portions of the “broadband chain”
 - Uniformly available broadband will help expand the provision of higher educational services
 - Uniformly available broadband will improve workforce development in the region.
 - Uniformly available, faster, more affordable broadband will help improve healthcare in the region

These are the key availability issues that require resolution by short-term, intermediate-term and long-term goals and objectives and associated strategic initiatives.

STRATEGIES TO INCREASE BROADBAND AVAILABILITY AND ADOPTION IN THE BOOTHEEL REGION

The strategies discussed below are divided into two major categories: Availability and Adoption. Each strategy is discussed beginning with the goal and then key objectives. The RTPT members, during their review, prioritized the goals and objectives and stipulated that each objective be placed into the plan as a **short-term** item (those that can be achieved **within the first two Years** of the Strategic Plan's implementation), **intermediate-term** item (**3-5 Years** after Plan implementation) and **long-term** item (**6+ Years** after Plan implementation). The Plan further discusses the proposed policies, action items and implementation plan, as well as the financial, human, organizational, technical and training/education resources to achieve the goals. This is followed by benchmarks to measure progress and degree of success.

Adoption

Goals

There are three major overall broadband adoption goals. They are:

1. Increase access to affordable broadband/internet
2. Increase computer/technology/internet literacy
3. Increase broadband/internet, computer/access device ownership

Availability

Goals

There are two major goals to increase availability of broadband in the Bootheel region. They are:

1. Expand broadband availability such that it exceeds the Governor's goal of 95% availability to the entire Bootheel region
2. Expand broadband capacity where there is currently broadband access, such that individuals and businesses have access to:
 - Multiple providers
 - Multiple technologies
 - Multiple tiers of access, up to and including the highest levels of individual and business/institution access envisioned for the future in the National Broadband

Plan (up to 100 Mbps download and 50 Mbps upload provided to residents and up to 1 Gbps or more provided to community anchor institutions and any businesses that desire such speeds).

The strategies and the elements to implement these goals are described in detail below.

Each goal is discussed from beginning to end in the regional order of priority determined by the RTPT.

Goal 1. Availability -- Expand Broadband Capacity throughout the Bootheel Region

Objectives

- a. Design capacity expansions during the short term where they are most feasible** – For example, where plans are already on the drawing board, where it requires only swap-outs of equipment, in high-density areas where return on investment is relatively quick and the indicated need for higher speeds, redundancy and competitive services is high. This work should be coordinated through provider meetings sponsored by the RPEDC's Technology Committee. Key focus areas of such meetings should include expansion of, and affordable access to, middle mile infrastructure, as well as pursuing aggregation of user demand.
- b. Begin expansions of capacity in the short term.**
- c. Continue capacity expansion in the intermediate term** - Such that high levels of residential service (up to 100 Mbps download/50 Mbps upload) are available to residents and up to 1 Gbps is available to community anchor institutions and businesses in all areas with a non-rural population density (urban, suburban, incorporated areas, etc.).
- d. Expand competition in the intermediate term** - So that all areas with higher capacity also have multiple providers (more than 2) and multiple technologies (multiple wireline and wireless providers). This should provide the competition, redundancy, performance and reliability desired by residents and businesses. Such a competitive environment should also have a competitive market affect on pricing and incorporation of new technologies in order to stay competitive.
- e. This also should include expansion of technologies in the intermediate term that were heretofore not available to certain segments of the population.** For

example, while certain populated areas have both cable modem and DSL competition, just outside these areas there may be only wireless options.

- f. Continue capacity expansion efforts so that during the long term, everyone in the region has access to up to 100 Mbps for residential and up to 1 Gbps for community anchor institutions and businesses, including access to multiple technologies and multiple providers.**

Policies

- a. Capacity expansion is perhaps the most critical area where consensus policy-making needs to occur.** For example, providers have noted during the assessment and planning process that they believe that some areas will not support competitive providers, because there is only a marginal return for a single provider. In other instances, providers indicate that the lack of cost-effective middle-mile infrastructure creates a climate where capacity cannot be expanded in an affordable way.

However, this dynamic significantly changes if the need and desire for adoption increases, based on the adoption spurring efforts detailed below. Additionally, if more services are available for both residential and business, the price/value comparison will move in a higher price direction, thus supporting the operation of competing providers with multiple technological solutions, the ability to provide redundant circuits, etc. and other characteristics which have shown to positively increase the amount of income expended on broadband services and related hardware applications.

Accordingly, it will be important for the federal government to continue to pursue the goals and objectives in the National Broadband Plan, which target, as an outcome, available, high capacity, competitive, affordable, broadband solutions for all. It is also important for the State to emulate these pursuits and establish statewide policies, including incentives, to spur availability such that it is ahead of, or at least consistent with, an increasing computer/internet/broadband adoption rate. A significant problem would occur if adoption is spurred, but broadband is not available. This has shown to cause significant consternation and subsequent abandonment of adoption efforts by individuals that face lack of availability.

Action Item/Implementation Plan

Short Term

- a. RPEDC Broadband Development Program and the RPEDC's Technology Committee work with all providers, especially the providers with the**

characteristics discussed above, to develop capacity-enhancing initiatives. This should include development of more middle mile infrastructure options, more efficient access to rights-of-way, inventorying of towers and other potential antenna locations, review and, where necessary, modification of zoning requirements, demand aggregation and other related activities.

- b. Necessary funding and support is also obtained.

Intermediate Term

- c. Capacity expansion efforts begin and continue until all non-rural areas have multiple competing providers offering multiple technological solutions, with up to 100 Mbps for residents and up to 1 Gbps for community institutions/businesses by the end of the intermediate term.

Long Term

- d. All Bootheel region residents and businesses have access to multiple, high capacity broadband.

Resources Needed

a. Financial

- **Similar to the above, it is not yet known what the financial implications are of development of higher capacity, competing provider and technology options, until such options are designed and return on investments evaluated.** It is known, that while competing options may cause initial reductions in price, thus initially reducing revenues, ultimately, if the need that has been defined herein is met, such options will expand the market by adding consumers, and expand the market by increasing the revenue per household or business, including instances where both business and residential consumers are choosing multiple providers (based on meeting fixed and mobile access, redundant and higher capacity needs for both work and residential applications).

It is likely that expanding capacity will be significantly cost efficient in a number of cases such as expanding the capability of current cable modem based DOCSIS 3.0 solutions to provide greater capacity for residents and businesses, or where line extensions can be expanded from the core (for example to expand DSL and/or cable wireline competition in areas where either one or the other could expand from their existing network to provide competitive services). Additionally, it is feasible that an aggregation of

demand could help spur development of new, cost-effective middle-mile infrastructure.

All of these options will need to be designed and evaluated. Where the return on investment is viable, these should be the first areas to see an expansion in capacity.

b. Human

- **Coordinating resources will need to be done at the State and regional level, to ensure that this “enhanced capacity” goal continues to be on the radar screen.** Additionally, providers will need to allocate personnel to focus on this as part of their intermediate and long-term planning.

c. Organizational

- **Capacity expansion will be a significantly beneficial effort.** Some of the resources of both the State’s MoBroadbandNow Office as well as the RPEDC’s Broadband Development Program need to be devoted to this effort, because it serves a critical need. Specifically, as capacity, technology and competition are expanded in an area, they continue to help open up greater opportunities for economic development and expansion in all sectors.

d. Technical

- **Similar to the above, while some technical resources will be needed at the State and local level to evaluate the plans of the service providers, most of the technical resources will come from the provider community itself.** This will include not only operational, design and engineering personnel, but also research and development personnel at both the State and Corporate level. Technical resources will be critical to designing capacity enhancements that will incorporate needed middle mile infrastructure, redundant pathways and similar network elements.

e. Training/Education

- **Resources will be needed in this category to provide information on the benefits of enhanced access (faster speeds, new and additional applications, expanded use of portable technology, the need for redundant operations, etc.).** The need for education and training should factor in again to the medium to long-term planning efforts of both the service provider community and the State and regional broadband programs.

Timeline/Benchmarks

Short Term

- a. Design initiatives to take advantage of expansion that is either currently on the drawing boards or could be done in a relatively short order with a known, reasonable return on investment.
- b. Implement these capacity expansion efforts, as well as begin designs to bring expansions and capacity to the entire region.

Intermediate Term

- c. Focus on expanding capacity, access to middle mile infrastructure, multiple providers and technology options to those areas that currently only have a primary or two providers.

Long Term

- d. The long-term planning horizon should see 100% of the region with three or more providers, fixed and mobile, with residential capacity up to 100 Mbps per home and community anchor institution/business capacity up to 1 Gbps per business.

Goal 2. Adoption -- Increase Access to Affordable Broadband/Internet

Objectives

- a. **Inventory and expand public access availability to computers and the internet** – This will mean inventorying and expanding both the capacity of internet/broadband at existing locations as well as the number of devices at these locations and support for those that seek to utilize public access during the short term.
- b. **Continue to expand public access, including to new locations** – This would mean placing public access computers in locations where they currently aren't, including potentially at Chambers of Commerce (for businesses to use), non-profits, community centers, businesses in remote areas that have high-speed internet access but surrounding residents do not (to primarily support their employees) potentially through public/private partnerships, and other such locations during the intermediate term.

- c. Develop and expand a low cost, basic broadband access throughout the region** – Experience indicates that the price point for such access has to be reduced to approximately \$9.95 per month (the current cost for a number of dial-up circuits, as well as the cost of CenturyLink’s and some other providers’ most basic broadband service). Experience indicates that when affordability is the broadband adoption inhibitor, this price point will attract adopters.

For both efforts, the success should begin to be measured during the intermediate term and then again at the beginning of the long term.

- d. During the long term, make decisions to sustain, reduce, or expand public access and basic broadband provision efforts to ensure 95% access and adoption or greater.**

Policies

- a. Regarding public access** – Much work is being done by TRCC through the Missouri Department of Higher Education based on its receipt of NTIA BTOP funds to develop public computing centers. This work should be leveraged to fine-tune plans to enhance existing and expand public access locations.

As discussed below, expansion will also depend upon other available funding. Significant funding is available through grants, and is anticipated to be going forward, as well as through partnerships with organizations like One Economy. These opportunities should also be leveraged to enhance and expand the level of public access needed to reach the 95%+ level of adoption.

- b. Regarding basic broadband/internet access cost** - Two policies need to be pursued at the State level. First, the State should consider incentives, favorable tax policies, etc. for those providers that indicate that they will offer affordable, basic broadband access through the planning horizon and beyond. Similar to the conditions of, for example, CenturyLink’s Internet Basics program, the State may want to place some conditions on such access to ensure that it targets those most in need. If financially feasible, though, it would be most beneficial if it was available to everyone (since a percentage of internet adopters clearly perceive that dial-up is enough, even when broadband is available. Their inhibitor is primarily their current price/value comparison).

Action Items/Implementation Plan

a. For Public Access Computer Centers

Short Term

- Inventory and evaluate existing centers for expansion.
- Determine items needed for expansion (hardware/software, personnel support, space, etc.).
- Seek partners for development of new centers.
- Begin and continue to expand existing centers.
- Determine hardware/software, etc. needed for development of new centers.

Intermediate Term

- Develop and continue to expand new centers.

Long Term

- Make decisions to sustain, reduce or expand public computer access based on the 95%+ adoption benchmark.

b. For Basic, Low Cost Broadband Access

Short Term

- Work with providers to investigate and determine how to implement low cost broadband access.
- Determine parameters needed.

Intermediate Term

- Implement initial basic access in targeted locations.
- Evaluate, modify as needed, and expand initial offering throughout the region.

Long Term

- Continue basic service provision if needed to maintain broadband adoption levels as.

Resources Needed

a. Financial

- **Expand public access computers** – This will require financial support for new hardware/software and replacement over the planning horizon as well as additional personnel support costs, especially for new locations. The exact amount of funding support will depend significantly on the amount of expansion made, as well as how much capability is implemented in new locations (i.e., number of devices, amount of broadband capacity accessed, number of support personnel to assist users, etc.)

Accordingly, for planning purposes, we have projected the following unit costs:

- \$1,000 per hardware/software package
 - \$15.00 per square foot of operational space
 - \$150.00 per month for broadband connection capacity expansion
 - \$50,000 in loaded personnel cost for support at new locations, depending on the size of the program; \$25,000 at existing locations
- **Region-wide, low cost broadband internet access tier** – This will depend upon the incentives provided. Some estimates indicate that this is generally consistent with the true cost of providing basic broadband service, once a system is established as a going concern, without profit and without placing money in reserve for enhancements and expansion. Likely, provision of this service will need to be negotiated with the service provider industry.

b. Human

- **Similar to the above, coordinative resources will be needed at the RPEDC level to help design and implement expansions of existing public access computing locations as well as partner with other organizations to develop new locations** - Additionally, there will likely need to be additional, trained, skilled, personnel to support the public's access to the computing and application resources.
- **Development of a basic broadband tier region-wide** – There will need to be resources at the State level to help develop incentives, resources at the local level to work with the providers locally to implement such a service, as well as promote it throughout the region. Additionally, service

providers will need to allocate resources to interface with the State and the RPEDC, as well as provide outreach to those that would qualify for the program.

c. Organizational

- **The central focus would be the Broadband Development Program at the regional office, as well as specific resources at the State, including the MoBroadbandNow Office as well as, most likely the PUC, the Department of Economic Development, and others who would help establish the incentives to spur the provision of basic broadband service.** Additionally, resources would be needed at each of the current organizations that provide public access to computers, internet and broadband as well as partner organizations. These same entities may be involved, as indicated above, in educational and training functions since access to hardware/software will be needed for those functions as well.

d. Technical

- **Expansion of Public Access Computing** – Technical resources will be needed to install new hardware/software, as well as train support personnel (and potentially users) and maintain the equipment.
- **Concerning the basic level of broadband access** - Service providers should anticipate heightened service support, since many who will take the lowest tier of service will be broadband users for the first time.

e. Training/Education

- **As indicated above, part of the support personnel function for Public Access computers would be to educate users on the use of both the hardware and software resources at the public access locations.** Additionally, service providers should anticipate additional education and training support, including materials and personnel for first time broadband users.

Timeline/Benchmarks

Short Term

- a. Both existing and new public access computing locations are targeted for expansion and development. Also, initial discussions occur with all service providers to establish a basic broadband tier of service similar to “Internet Basics”.

- b. Existing locations are expanded to provide greater access to public computers, broadband and related applications.

Intermediate Term

- c. Initial access to basic broadband service is provided and contributes to a rise in broadband adoption. Nearly 20% of computer users have not adopted the internet at home, and 10% of the Bootheel region with internet access at home currently has not adopted broadband, but there are other factors besides affordability contributing to this. Accordingly, a rise of between 2 and 5% per year in broadband adoption due to availability of a low cost broadband tier would be seen as significant.
- d. Additional public computing centers are made available. The basic broadband tier of service is offered to all throughout the region. Broadband adoption increases such that it reaches 95% levels.

Long Term

- e. Public Access computing centers are maintained as well as basic broadband service to sustain 95%+ broadband adoption levels.

Goal 3. Adoption -- Increase Computer/Technology/Internet Literacy

Objectives

- a. **Increase the perceived value of computer ownership and use, internet access and broadband access** – As a first objective, engaging every sector (Agricultural, Business, Community Services, Education, Government, Workforce Development, etc.) in a regional (supported by a Statewide) campaign to show the value of access devices, internet access and broadband for all segments of the population, will help raise awareness and understanding of their utility in each individual's life (home, work, recreation, education, etc.) and have the consequential affect of increasing value. Once seen as valuable, individuals without computers, internet access and/or broadband at this point will be willing to make price/value decisions based on their projection of the cost/benefit. This template development, outreach and educational campaign should begin with the inception of the Strategic Plan and ramp up during the short term.
- b. **Continuation and heightening of the outreach campaign** – Evaluation of the template and the campaign's efforts should be made during the intermediate term and the campaign adjusted to better reach target audiences (at the outset, target

audiences include: lower socioeconomic households, elderly residents, and rural residents).

- c. Inventory and enhancement of existing and development of new computer/technology/internet/broadband literacy programs** – Based on the response to the regional outreach effort, existing programs (at the Three Rivers Community College locations in Kennett, Sikeston and Malden developed through the Missouri Department of Higher Education BTOP Grant, workforce training and development locations, K-12 School Districts, Libraries such as the Keller Public Library, Sikeston Public Library, Riverside Regional Library and others, etc.) should be inventoried and expanded where feasible to incorporate the individuals that respond to the outreach campaign. Additionally, other programs can be developed (in conjunction with the Chambers of Commerce, private businesses, governments, at the RPEDC location, etc.) to help fulfill the need.

At the outset there should be three types of interwoven training:

- Computer literacy and use training
- Internet access, especially broadband, training, and
- Application training, from basic to advanced, depending upon the level of the trainee

This should begin with inventorying and expansion of existing programs during the short term and ramp up to programs region wide, with a variety of partners during the intermediate term. Such programs can level off, or even be reduced, once attendance begins to drop, indicating that residents and business representatives are sufficiently trained.

- d. Sustain the level of outreach needed to maintain the highest possible (95%+) perceived value of computers, internet and broadband within the region by the end of the intermediate term.**
- e. Sustain the level of training needed during the long term to ensure that all that desire such training receive the level that they need to sustain their desired quality of life** - Also, in working with business and industry, ensure that the level of training remains high to both retain and attract knowledge and information-based businesses.

Policies

- a.** It will be important for the State to both support and design templates for outreach campaigns, that can then be tailored locally, to heighten the perceived value and enable individuals and businesses to make reasonable cost/benefit, price/value

comparisons. The desired outcome is increasing computer/internet/broadband technology literacy and use.

- b. There should also be incentives given to non-profits, businesses, educational and public sector entities to expand current educational and training programs in this area, or to start-up new educational and training programs.

Action Items/Implementation Plan

Short Term

- a. Develop a Statewide template and local outreach plan and associated materials.
- b. Establish a list and inventory of educational/training partners that can enhance and expand their programs.
- c. Implement the outreach plan through partnering with those that currently educate and train in this area, as well as new partners (business, healthcare, industry, community services, etc.) that would find benefit in outreach to its workforce and client base.
- d. Structure plans to enhance and expand existing programs.

Intermediate Term

- e. Continue outreach efforts
- f. Expand existing programs. Then, start up programs with additional participants who have responded to the outreach program.
- g. Evaluate both the outreach efforts and the expanded training efforts.
- h. Adjust efforts based on the outcome of initial efforts to better target outreach and close remaining gaps in technology/broadband/internet literacy; continue sustaining and expansion of, successful, existing programs and plan for and implement new programs.

Long Term

- i. Evaluate all efforts to-date.
- j. Change to a sustaining mode if 95% of residents and businesses indicate that they are sufficiently trained or are able to access training when needed to advance their skills.

Resources Needed

a. Financial

- **Outreach Programs** – Funding will be needed at both the State and regional level to: develop a template; tailor it locally; work with existing and potential partner organizations; develop outreach materials; and publicize training and education programs. Funding will also be needed to sustain and expand these efforts as needed over the planning horizon, as well as continually evaluate and modify these efforts as needed.

It is recommended that full time staff at the State and local level be responsible for the outreach efforts with supporting operational material and resources. Accordingly, up to an estimated \$100,000 should be allocated for this in the short term (\$50,000 at the State level and \$50,000 at the regional level).

For the intermediate term, this could drop to approximately \$50,000 annually (\$25,000 at each level).

- **Training and education programs** – These are at the heart of adoption spurring programs, and as such will take significant financial resources to implement, especially initially.

On a region-wide level, expanding existing and adding new programs (as referenced above) could potentially take upwards of \$150,000 to \$300,000, which would need to be sustained for both maintenance and expansion purposes through the intermediate term. Evaluation can be made during the long term to see if such budgets could be reduced.

- **Grant availability** – There are a variety of educational grants for at least the short-term that are available from foundations, educational associations, other non-profits (such as One Economy), and the federal government. Additional ones are anticipated. One resource to start with is One Economy, which has recently been tapped by the FCC to lead its “Connect 2 Compete” initiative. As such, funding for grant writing resources will be critical. Such grant writing funding should be seen as an ongoing expense until at least 95% levels of training/education have been obtained.

b. Human

- **Outreach Programs** – Regarding outreach, human resources will be needed, including both those at the State and regional level that have a

background in education, training and marketing communications. Again, we anticipate that this will be a fulltime job for at least the short term of the planning horizon.

- **Training and education programs** – This will require trained educators, as well as “train the trainer” personnel. Some of these positions will be existing, and will handle expansions in attendance at their existing programs. Other programs and classes at existing locations will need to be established, perhaps doubling the number of educational/trainers at some existing locations and adding new ones at other locations. Once the results of the outreach are known, the exact education/training workforce needed over the length of the planning horizon will need to be more finitely determined. This may also adjust the initially proposed budgets under financial resources.

c. Organizational

- **Similar to the above, we anticipate that coordinative efforts will be needed at the RPEDC level under a continuing regional broadband enhancement program** - Beyond this, every partner organization will need to coordinate with the RPEDC, specifically those involved in the outreach and education training effort. It would also be wise to establish at least a virtual (by electronic means of meeting and communication) Education and Training Committee which involves chief administrators of the training components of healthcare organizations, workforce development entities, Chambers of Commerce, large businesses and industry, School Districts, TRCC, the Libraries, etc.

d. Technical

- **Potentially additional hardware/software to support the training and education efforts, as well as additional or expanded broadband connectivity at training and education locations will be needed.** If funds are provided for new hardware/software, it is likely that existing locations that have been set up for training to-date can be expanded. Where that is not feasible, classroom/training room design work may be necessary.

e. Training/Education

- **It would be useful to develop a tailored curriculum which would focus on the specific issues of the Bootheel region** – This should include computer/internet/application/broadband skills that are highly valued and

utilized in agriculture; similarly, skills that are either highly used in current healthcare organizations and retail and small businesses within the region, or those businesses and industries that are desirous of either relocating to the region or those that it would be beneficial to attract to the region, such as knowledge/ information-based businesses; skills that are needed to support the tourism industry, such as highly graphic intensive and interactive web design to attract tourists and vacationers; and others. This curriculum could be developed as a template at the statewide level and then tailored regionally.

Timeline/Benchmarks

a. Outreach

Short Term

- Outreach efforts designed and implemented

Intermediate Term.

- Outreach efforts evaluated and modified.
- Outreach efforts continuing and measured for success.

Long Term

- Outreach efforts evaluated for level of continuation.

b. Training/Education

Short Term

- Partners for both expansion of existing programs and development of new programs determined.
- Expansion of existing programs

Intermediate Term.

- Addition of new programs, as well as evaluation of existing programs.
- Evaluation of existing and new programs to ensure all gaps are closed.

Long Term

- Evaluate at what level the program should be continued.

Goal 4. Adoption -- Increase Broadband/Internet, Computer/Access Device Ownership

Objectives

- a. Inventory computer reclamation and redistribution/repurposing efforts and expand as needed** – Efforts should be made locally, most likely supported by a Statewide campaign, to have institutions, businesses and homeowners give old and/or unused computer/access devices to be reclaimed, repurposed and redistributed to those that desire such devices, but can't afford them. They would be recycled to a central location(s) where they would be repurposed. Residents and businesses would apply to receive them at no or low cost. Where efforts already exist, such as through the neighboring Ozark Foothills Recycling Center and Goodwill in Sikeston, seek to support and expand such efforts during the short term. Where new efforts may need to be developed, including partnerships with other recycling entities, such as the RPEDC's own recycling trailer or the Bootheel Recycling company, look at the potential for public/private partnerships during the intermediate term.
- b. Continue reclamation, redistribution/repurposing efforts as a going concern during the intermediate term.**
- c. Develop and implement a mechanism to provide low cost tablet computers** – It has been projected that as time increases, tablet computing devices will become the primary means for non-work access to the internet (as well as the preferred means of portable work-related access to the internet), and also the easiest device to learn and use effectively. Accordingly, there should be a significant push within the planning horizon during the short term to develop low or no cost tablet distribution to those that desire computer/access devices, but do not have access to them. During the intermediate term, develop a pilot program with K-12 Schools to expand distribution of tablets and then evaluate the program's effectiveness.
- d. Ensure access by the end of the intermediate term to all those within the region that desire computers but don't have them through continuation of the efforts started previously** - This should include provision of devices to all those that desired computer/access device ownership at the beginning of the planning horizon, plus those that subsequently desired such devices based on the efforts under other adoption goals, concerning an increase in computer literacy as well as in the perceived value of computing devices.

Policies

- a. **Statewide Campaign and Incentives** – To support local efforts, there should be an expansion in statewide outreach campaigns to encourage computer reclamation, redistribution and repurposing efforts. This can include incentives to businesses, institutions and homeowners. It can also include involvement in national, non-profit or private sector sponsored initiatives, such as One Economy, to distribute low cost computing devices, again focusing on tablets as time progresses.

Action Items/Implementation Plan

- a. **For Computer Repurposing and Tablet Distribution**

Short Term

- Outreach to homes, businesses and institutions to recycle computing devices.
- Build on the existing neighboring recycling location in Poplar Bluff, potentially developing sub-regional drop-off locations in each Bootheel County.
- Expand testing, repairing, and repurposing of units received to create the largest feasible inventory.
- Begin and expand the program to procure and develop an inventory of tablet computers, including working with the “Connect to Compete” program.
- Develop/update the application process.

Intermediate Term

- Modify the current RPEDC recycling trailer operation, if needed.
- Continue and expand distribution.
- Work with K-12 Schools to develop pilots that will expand tablet PC distribution.
- Measure the success of the initial effort, revise procedures and processes as necessary and continue to expand the.
- Revise the application process to determine the best distribution of tablets versus other computing devices.

- Measure progress on an annual basis, revise procedures and processes as necessary.

Long Term

- Determine whether both processes are necessary, or whether it is feasible to distribute repurposed or new tablets at no or low cost so that only one program needs continuation
- Measure the success of the entire project. If it is determined that everyone in the region that desires a computer has one, then downscale efforts as needed.

Resources Needed

a. Financial

- **Computer reclamation/redistribution/repurposing** – Experience indicates that the best success in this area has been achieved through a combination of volunteer efforts and monetary support. Specifically, space typically can be donated for drop-off points including Chamber of Commerce locations, educational facilities, excess space at industrial/manufacturing locations, etc. Volunteer resources, as explained below, can often be enlisted for transporting devices to and from drop-off locations, as well as to homebound residents.

Monetary support is typically needed for personnel needed to coordinate and manage the program, as well as technicians to repair and reclaim computing devices. Monetary support is also needed to set up, maintain and expand the capital equipment needed to support repair and reclamation operations.

Although this cost would need to be significantly refined as detailed operational plans are developed, a good starting point would be to estimate up to approximately \$100,000 in monetary support needed initially, with up to \$50,000 per year needed thereafter and then funding budgeted as needed once everyone in the region who desires a computer has one.

- **Tablet computer procurement and distribution** – It is likely that both commercial tablet computer vendors and programs such as One Economy will seek to distribute low cost tablet computers at a price point of approximately \$100. Application typically needs to be made to these programs at the point at which they are available, but the Strategic Plan can be utilized to demonstrate the need. Assuming that such programs

will be subsidized, but not at no cost, potentially 1,000 units could be budgeted starting in the short term, totaling approximately \$100,000 per year for this program. At the end of the intermediate term, it can be determined whether additional support is needed based on the level of increase in computer penetration in the region.

- **Available grant funding** – There are continual funds available to especially provide capital support. Part of the organizational resources recommended in this Plan include grant-writing support. Wherever feasible, such funds should be applied for and accessed to defray the cost described above.
- **Support for the RPEDC** – Since the Plan, as described further below, anticipates that the RPEDC will continue in its broadband development role by establishment of a Regional Broadband Development Program, there will need to be support for this function. A large-scale estimated cost would be approximately \$25,000 per year for someone at the RPEDC to oversee and coordinate all the efforts described below.

b. Human

- **Computer reclamation/redistribution/repurposing** – As discussed above, the human resources needed for this program include:
 - Volunteers for transport and receipt of devices at drop-off locations, as well as “word of mouth” outreach
 - Paid administrative and technical personnel to coordinate outreach efforts, interface with the RPEDC and State and oversee technical repair and reclamation operations
 - Paid technical staff to perform the repairs
- **Tablet computer procurement and distribution** – Paid administrative staff will need to be put in place, most likely combined with that for the program above, to seek out and apply for available programs, and then administer distribution of the computers. This person would also coordinate with institutions to help distribute such devices (such as through K-12 schools to parents and workforce development centers to job seekers, in households that have no computing devices)

c. Organizational

- **Computer reclamation/redistribution/repurposing** – This program most appropriately would fall as a subprogram of the overall Bootheel Broadband Development Program. The most feasible way to administer such an overall program, including oversight of the efforts detailed further below, would be to house the program under the auspices of the current RPEDC, which also administers an existing recycling program.
- **Tablet computer procurement and distribution** – Similarly, this part of the computer ownership enhancement program would be administered overall under the RPEDC.
- **Available grant funding** – Similar to the above, the RPEDC’s Broadband Development Program would administer this function, including receipt of funds.

d. Technical

- **Computer reclamation/recycling/repurposing** – Technical support will be needed here in the form of technicians to repair and certify the reclaimed computers.
- **Tablet computer procurement and distribution** – Technical support will be needed here to specify the computing devices and supply information to grant writers.

e. Training/Education

For all efforts under this adoption goal, training and education in computer literacy will be needed to ensure the best utilization of the devices distributed. This is covered in the next goal.

Timeline/Benchmarks

a. Computer reclamation/recycling/repurposing and Tablet PC procurement and distribution –

Short Term

- The program is put into place, fully funded and distributing PCs.

Intermediate Term

- The program expands computer ownership approximately 2-3% per year until it hits 95% in the Bootheel region.

Long Term

- Computer ownership is sustained and is increased if feasible (experience indicates that 100% of the population may never own a computing device, based on lack of perceived value despite all computer ownership-spurring efforts).

Goal 5. Availability -- Expand Broadband Availability such that it Exceeds the Governor's Goal of 95% Availability for the Entire Bootheel Region

Objectives

- a. **Work with providers in the short term to design initiatives to expand broadband to ensure dial-up and satellite customers have affordable, high-speed internet choices** – Although all existing providers in the Bootheel region should be involved in this effort, a review of the State's broadband availability maps, as well as the location of dial-up and satellite internet users from the residential survey, shows that it would be significantly, initially beneficial to work with certain providers serving:
 - Dunklin County – including AT&T Southwest, Big River Telephone, New Wave and mobile broadband providers.
 - New Madrid County – including AT&T Southwest, BPS Networks, Charter Communications and mobile broadband providers.
 - Mississippi County – including AT&T Southwest, Charter Communications and mobile broadband providers.
 - Pemiscot County – including AT&T Southwest, Mediacom, BPS Telephone and mobile broadband providers.
 - Scott County – including AT&T Southwest, Charter Communications and mobile broadband providers.
 - Stoddard County – including AT&T Southwest, BPS Telephone, BPS Networks, New Wave and mobile broadband providers.
- b. **Begin to implement the design initiatives discussed and agreed upon in the intermediate term.**

- c. **In the intermediate term** – Review level of availability in the region. Continue to expand high-speed, affordable broadband to all within the region as soon as needed.
- d. **Maintain and expand broadband networks to reach 100% availability in the Bootheel region during the long term.**

Policies

- a. **It is already stated as a policy that broadband be available to 95% or more of the population statewide by 2014.** A review of broadband availability maps shows that this has already been achieved for the Bootheel region. Accordingly, the focus should now be on any remaining unserved areas, where dial-up and satellite are predominant. Consistent with the discussion above related to the provision of basic broadband service, similar incentives should be considered to begin by focusing on remaining unserved areas and provide them with at least basic broadband service availability.

This is not only a regional and statewide initiative, but also a national initiative. Providers, for example, should be able to tap in to the Connect America Fund (CAF) program to help accomplish this. The Bootheel Broadband Development Program should work with providers regionally, as well as the State working at a statewide level, to assist providers in any way feasible to access such funds.

Action Item/Implementation Plan

Short Term

- a. RPEDC Broadband Development Program works with all providers, especially the providers discussed above, to evaluate, validate and develop design initiatives.

Intermediate Term

- b. Necessary funding and support is obtained.
- c. Broadband system new build and expansion efforts begin and continue until 100% availability is achieved.

Long Term

- d. Broadband availability is maintained at the 100% level and capacity is increased as discussed.

Resources Needed

a. Financial

- **Until designs are chosen, it is not known exactly how much funding will be needed to build out to the 100% level of broadband availability within the Bootheel region.** This includes both Capital funds and the incremental operational cost that will be required to support the expanded networks. Detailed figures should be developed during the short term as part of the design phase, first for the targeted unserved areas described above and then for others, to determine costs to achieve the 100% level by the end of the intermediate term. These should be determined in the short term and agreement reached both at the regional and state level on the appropriate level of funding needed. Then funds can be procured and the build initiated.
- **Grant and other funding source application development** – The region and the State should stand ready to support the providers in obtaining CAF funding (where pertinent), USF funding (until it is no longer available) and other infrastructure development funds to support the infrastructure builds designed.

b. Human

- **There will be a variety of human resources needed, some which are factored into other activities, such as administrative and operational human resources at the State and regional level.** A number of human resources will also be needed at the service provider level in order to design and build the network expansions.

c. Organizational

- **Similar to the above, organizations involved will include the State, the RPEDC, and the service providers.**

d. Technical

- **Primary technical resources will come from the service provider, including the design and engineering of the infrastructure expansions to achieve the levels of broadband availability within the timelines discussed above.**
- **There will also need to be some technical resources at the State and local level to evaluate the plans of the service providers.**

e. Training/Education

- **No additional resources are needed in this category, beyond those already described above for educating those on the utility of the broadband services that will be made available to them.**

Timeline/Benchmarks

Short Term

- a. Design of infrastructure expansions to provide service to the unserved in the targeted areas described above.

Intermediate Term

- b. Procurement of funding to implement the builds.
- c. Build out infrastructure to provide services to those targeted areas.

Long Term

- d. Design, secure funding and build infrastructure to provide and maintain 100% availability.

Additional detail supporting this Strategic Plan can be found in the Attachments.

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ATTACHMENTS

(Provided in Separate Documents)