**FINAL REPORT**

# HARRY S TRUMAN REGION
# NEEDS ASSESSMENT RESULTS

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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 to-date has won more than $275 million in stimulus funds for its broadband availability and adoption goals.

A portion of this funding was designated for broadband mapping and planning and was provided through the U.S. Department of Commerce's, National Telecommunications and Information Administration's (NTIA) State Broadband Data and Development Grant Program (SBDD). The Notice of Funds Availability (NOFA) that provided the criteria and parameters for receiving funds from the SBDD, had specific requirements for the use of these funds in pursuing broadband planning. These purposes included: the identification of barriers to the adoption of broadband service and information technology services; the creation and facilitation of local technology planning teams; and planning that would lead to the establishment of computer ownership and internet access programs.

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# 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. Governor Nixon choose to aggressively pursue the funding for federal stimulus broadband (mapping, planning, BTOP, RUS) ARRA monies. He sees broadband adoption fundamental to Missouri's future – in much the same way as the railroad, and then the interstate highway system, were to their historic periods – if you don't have an on-ramp you may not have a future. Governor Nixon has set an ambitious goal to increase the number of Missourians with broadband accessibility from the initial level of 79 percent to at least 95 percent by the end of 2014.

The initiative's first effort was partnering with data 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, this investment total is nearly $320 million.

Missourians have already begun reaping the benefits of improved high-speed Internet. In May 2011, Ralls County Electric Cooperative was one of the first ARRA awarded providers to substantially complete construction and provide service to homes and businesses. Other *MoBroadbandNow* endorsed projects are underway and as a result more citizens will see faster, reliable connections in the future.

*MoBroadbandNow* is a state led collaboration with the University of Missouri and private sector partners GeoDecisions and CBG. The initiatives undertaken have 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.

The University of Missouri team has produced a series of state and regional maps identifying population density, the number of broadband providers and service coverage, average download speed and topography. There are currently over 100 Internet Service Providers (ISPs) participating in these data submissions.

Missouri has approached broadband planning from a regional perspective in that each of the 19 regional planning areas within the state are developing their own broadband strategic plan. A comprehensive broadband needs assessment was conducted in 2011 collecting residential and business data on accessibility, adoption, affordability, speed and usage. *MoBroadbandNow* team conducted a state-wide residential survey to assess the current internet and broadband adoption and availability in 2011, whereby more than 76,400 residential surveys were mailed out and approximately 13 percent (9,825) of the surveys were returned and analyzed. This effort represents one of the largest statistical samples on state broadband trends in the country. Additional data, maps and broadband planning information can be found at www.mobroadbandnow.com.

# Overview of the RTPT Process

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. The regional planning process was designed such that the RTPT members would meet several times over the course of approximately 18 months and work both independently and collaboratively in-between. The process was two phased, with the first phase 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.

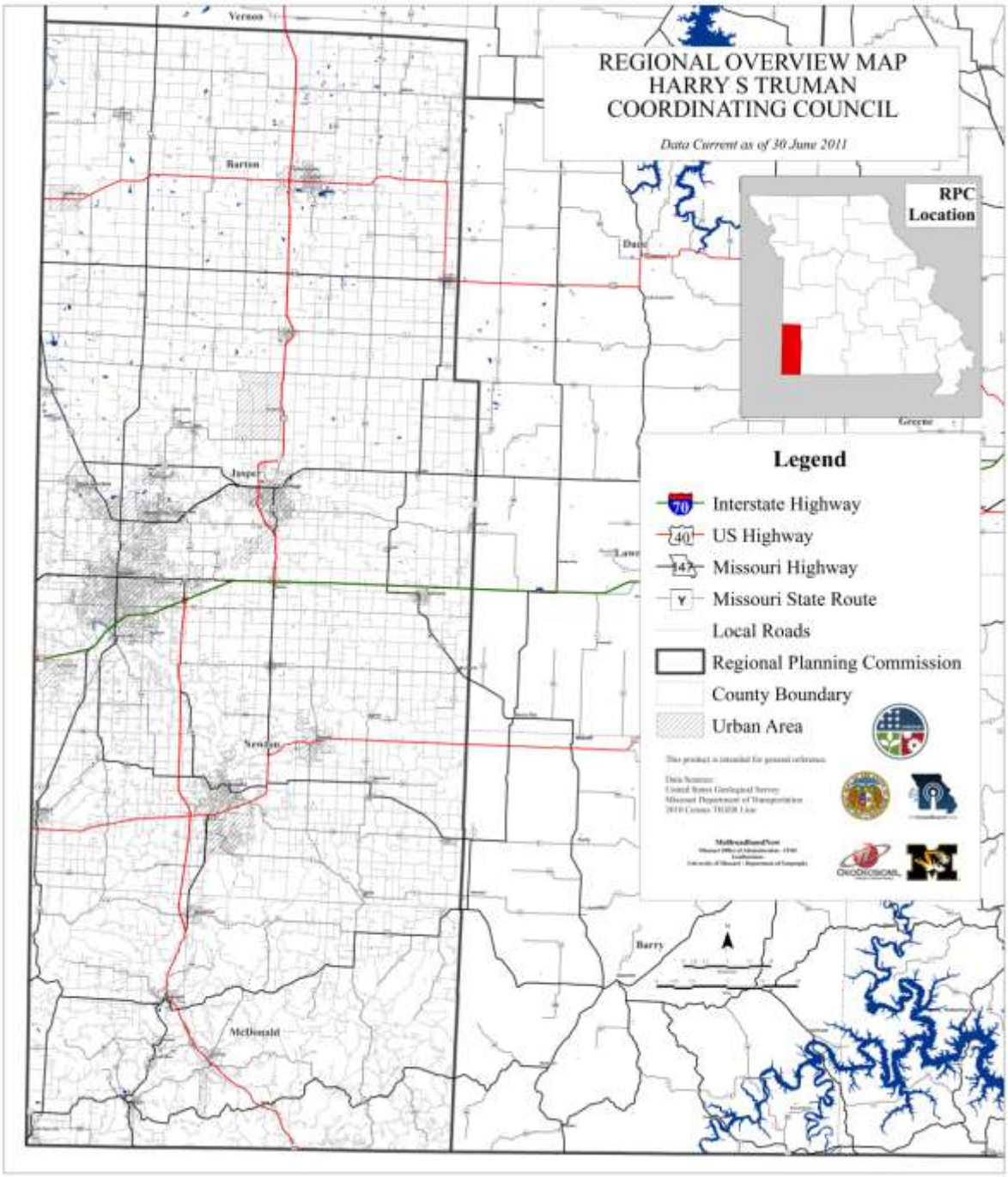



**Figure 1. Regional overview map for the Harry S Truman Coordinating Council**

The second phase of the process was Strategic Planning, where the RTPT analyzed the findings from the Needs Assessment, conducted a Strengths, Weaknesses, Opportunities and Challenges (SWOC) analysis concerning the findings and then developed a Strategic Plan. The Strategic Plan includes initiatives, directions, action plans, benchmarks, and success measures, all of which are to enhance and expand broadband infrastructure, service availability, and broadband adoption among all the communities of interest within the region. These Strategic Planning elements are detailed later in this document.

The RTPTs had many resources available to them to perform the Needs Assessment and prepare the Strategic Plan, including:

- The contents of a Broadband Planning Tool Kit
- A comprehensive broadband map and availability information from the State's *MoBroadbandNow* website: http://transform.mo.gov.broadband
- Facilitators from the State and its consultants to work with and help guide the RTPT through the planning process
- Gatherings with other RTPTs across the State to share thoughts, ideas, challenges and opportunities during Broadband Summits and through the Regional Planning tab of http://mobroadbandnow.com.
- Support from the staff of the RPC and MACOG (Missouri Association of Councils of Government)
- Links to planning resources, research and other materials from throughout the State and around the country where similar initiatives were underway

This 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 outline the Strategic initiatives and directions that will advance the broadband climate in the Harry S Truman region. This plan will include 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 resulting Strategic Plan is able to remain dynamic and be adjusted and updated based on changing circumstances, technologies, and results of any implementation efforts.

The Harry S Truman regional broadband planning process began March 16th, 2011. The RTPT process included the following four phases:

***Phase 1: Need Assessment and Existing Information Review:***

Three instruments were used for to gather information on the level of access and availability of broadband technology and to gather needs, interests, attitudes and opinions concerning broadband access, availability and adoption. The three instruments used were:

1. *Residential Survey:*

To obtain critical input from the residential community in the seven-county Harry S Truman region, a mail out, paper survey instrument was utilized. This ensured a broader distribution throughout the region since an on-line survey could potentially miss those without computers or internet access at home. Additionally, a written response survey provides a wealth of thoughtful, fully considered data because the respondent has time to consider the questions posed and respond. The survey allotted two-weeks for return of the survey.

To ensure that the results would be statistically valid (within a margin of error of ± 5% or lower), 4,000 homes were randomly selected from the most current United States Postal Service (USPS)

database available for the five-county region. Four hundred and twenty-one (401) completed surveys (10% response rate) were returned, of which 400 were randomly selected to be the sample analyzed.

Existing information were also reviewed from national level broadband studies (like Pew Center), and FCC and NTIA reports, as well as various sources at state and local levels.

*2. Business Survey:*

A General Business Community Survey was distributed on-line, and in hard copy form as needed, to business groups such as Chambers of Commerce (who further distributed to their members), and others to effect the widest possible distribution.

Specifically, the Harry S Truman Region Business Broadband Survey could be found via the website of the Harry S Truman Region Planning Commission (RPC); through the *MOBroadbandNow* website (where a business could click on the county they were in and be directed to the survey); through links provided in press releases; and via distribution through local Chambers of Commerce. Accordingly, the survey was promoted to all businesses within the Harry S Truman region so that all had an opportunity to respond.

The Harry S Truman Regional Business Community Broadband Survey was comprised of 32 question areas designed to elicit a wealth of information, including:

- Descriptive information about the respondent and the business
- Attributes of the businesses' internet service and whether it was provided via a non-broadband or broadband connection
- Ratings of various aspects of services, including cost, speed, reliability, installation, service and repair, and other characteristics
- Ratings of the importance of broadband to both their day-to-day operations and to the region as a whole
- Any final comments that they had about broadband service for businesses in the region.

Other business information was obtained through on-line surveys, focus groups, interviews and discussions with representatives of various business sectors. These business sectors included:

- Small Business
- Professional Services
- Retail Services
- Industry and Manufacturing
- Tourism
- General Economic Development

*3. Sector Surveys:*

Institutional, organizational and business sector data concerning the sectors' broadband-related needs, interests, attitudes and opinions, was collected through various methods, including:

- Focus groups
- Written Surveys
- Interviews
- On-line surveys

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 which for the Harry S Truman RTPT included 11 different sectors.

***Phase 2: Meeting and Planning Activities with the RTPTs***

A part of the RTPT's mission in developing a Broadband Strategic Plan for the Harry S Truman 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 helped identify broadband availability and adoption issues that are considered high priority and will ultimately lead to the development of Strategic Directions and Initiatives.

Before the RTPT could begin the SWOC analysis, it needed to understand the SWOC elements as they relate to broadband, and as they have been uniformly applied across all regional planning exercises. The definitions of the four (4) SWOC elements are as follows:

- **Strengths** – Broadband-related systems, practices, processes, and resources that are highly valued by broadband-related stakeholders within the region.

- **Weaknesses** – Areas that need improvement, reasons why stakeholders are not able to wholeheartedly embrace broadband and areas that tend to compromise the achievement of high levels of availability and adoption.

- **Opportunities** – Favorable situations/circumstances not yet taken advantage of that may positively impact the development and acceptance of broadband.

- **Challenges** – Present and future situations/circumstances that may negatively impact broadband development and acceptance as perceived by regional stakeholders.

As the major findings from the needs assessment were discussed, they were placed on flip charts for all RTPT members to review and analyze. Each member was given three (3) sets of four (4) different colored dots. Each color stood for either a strength, weakness, opportunity, or challenge. The RTPT members were then instructed to take some time, review all of the elements discussed and those captured and placed on the flip charts and then vote via their dots for the top three in each area of broadband strength, weakness, opportunity, and challenge within the Harry S Truman region across all of the different sectors.

After the RTPT meeting was completed, the votes of the RTPT members were analyzed along with the data from all of the participants and respondents across the various groups (residential, business, and sectorial). The results of the analysis were compiled in matrix form to indicate to the RTPT members not only where their voting and the responses from survey, focus group, interview and discussion participants showed consensus, but also where they showed divergence. Additionally, based on the consolidated analysis, the matrix showed what the top five (5) priority sectors of concern are. This information was then sent back to the RTPT members for their review, additional input and feedback, as well as their delineation, based on their review of all the data, of the top five (5) broadband-related priorities for the region. Review and analysis of the feedback from the RTPT members, together with all of the preceding information, resulted in the Harry S Truman region SWOC analysis and overview.

***Phase 3: Findings and Initial Strategic Plan Element Development***

It is important to note that the *purpose* of the broadband strategic planning process is to identify strategies, and related directions, initiatives, goals and objectives, that can be employed by interested parties within the RTPT's region in the coming months and years to leverage and build upon existing

broadband-related strengths and to overcome current weaknesses, effectively address current and future challenges, and take full advantage of current and future broadband build-out opportunities.

As such, broadband strategic planning is a large scale, high-level planning exercise that provides specific guideposts and pathways to better help the region build long term broadband sustainability concerning both availability (supply) and adoption (demand) for ***all*** the constituencies within the region. Consequently, while the broadband strategic plan will have specific recommendations for developing initiatives to implement the plan, it, like any strategic plan, is *not* an operational plan. For example, while large scale cost figures will be developed, the plan is not intended to detail, specific cost/benefit analyses for particular technical broadband system components or enhancements.

During this phase, the RTPT will review the initial findings, priorities, potential strategic directions and actions, timelines and resources needed related to those potential directions. In this phase, a number of potential strategic directions and initiatives will be identified, reviewed, discussed, and then incorporated into the draft of the Strategic Plan.

***Phase 4: Drafting and Finalization of the Strategic Plan***

At this stage, the final draft of the Regional Strategic Plan will be crafted and reviewed by the RTPT. The Regional Strategic Plan will consist of the following elements:

1. Introduction, Purpose of Planning Exercise, and Regional Overview
2. Key Assessment Findings
    a. Residential Survey
    b. Business Survey
    c. Focused Discussions by Sector
3. Detailed SWOC findings and analysis using the Needs Assessment as a guide
    a. Strengths and how they relate to *MoBroadbandNow* goals.
    b. Weaknesses and how they challenge *MoBroadbandNow* goals.
    c. Opportunities identified and how they support *MoBroadbandNow* goals and how to take advantage of these opportunities.
    d. Challenges identified and mechanisms needed to addresses these challenges.
4. Strategic Direction(s)
    a. Short, medium, and long term goals and objectives to boost broadband adoption and expand / enhance availability as well as regional policies that can roll-up into State policies for residential, business and Anchor Institutions encouraging:
        - Availability
        - Adoption
        - Digital literacy and usage
    b. Action Items and Implementation Plan
        - Short and long term
5. Financial, human, and organizational resource considerations
6. Timelines and benchmarks for measuring regional progress:
    a. Availability goals
    b. Adoption goals
    c. Usage goals

Once the RTPT members review and provide comments, the plan will be revised. From there, it will go back to the RTPT for a final review before being issued publically and then being rolled into a Statewide Strategic Plan for Missouri. The initial Strategic Planning process is then completed. However, the plan is designed to be a dynamic document and will be updated as progress is made.

# *Residential Survey Results*

## 1. Key Residential Community Findings from the Harry S Truman Region

The results of the residential survey are categorized into two large areas, consistent with the goals of the planning exercise: 1) Broadband and related technology and service adoption, and 2) Broadband access and availability. Before discussing the adoption and availability, this section describe the geographic distribution and the demographics of the responding residential population surveyed and then compare and contrast this population with the most recent regional demographic profile available for the Harry S Truman Coordinating Council (HSTCC). This follows a comparative presentation on the type of technology used and the application of residential internet.

### 1.1. Characteristics and geographic distribution of residential survey respondents:

As indicated in Table 1, the typical respondent was one who owned a house, was white, and lived in non-rural area. The median household income of all of the four counties in the region (see county profile table in the strategic plan document) are lower than the state level mean income ($44,306). There was a non-response rate to income related question of 28% (N=112) for the region. The household of the respondents in the regions (median = $ 50,000 and mean= $ 57,884) is higher than the actual income household income in the region (median =$ 44306). The mean income of the respondents of this region (57,884) was lower than the state average of all the respondents ($62,505), which is consistent with the actual income levels (see table 1). However, the median income of the survey respondents of the region was also higher than the median household income in any counties in the region. This comparison shows that the income related demographics of the respondents were not a typical resident for the region and that respondents to the survey instrument had higher incomes than the non-respondents. Results indicated that respondents with higher income were more likely to have internet access at home and given the fact that the median household income reported by respondents was higher than the typical resident of the region the results of internet adoption indicated by the survey might be little bit skewed.

**Table 1: Comparison of HSTCC to State responses for some demographic variables**

| Details | HSTCC Survey Respondents | Statewide Survey Respondents |
|---|---|---|
| **Percentage rural population** | 28% | 55% |
| **Mean age of respondent** | 52 years | 54 years |
| **Mean Household Income** | $ 57,884 | $62,505 |
| **% of non-white** | 3% | 4% |
| **Less than high school** | - | 2% |
| **High school** | 32% | 35% |
| **Above high school education** | 68% | 65% |
| **Full time employed** | 52% | 52% |
| **Part time employed** | 9% | 9% |
| **Retired** | 27% | 30% |
| **Have kids in home** | 40% | 36% |
| **Own a house** | 85% | 89% |
| **Mean number of years lived in current community** | 25 years | 25 years |

Data source: MoBroadbandNow – Residential Survey, 2011)

The Harry S Truman region makes up 4% of the population of the entire state. Table 2 describes the geographic distribution of the residential survey respondents and compares with the actual percentage of each of the four counties in the region.

**Table 2: Geographic Distribution of respondents in HSTCC**

| County | Percentage of Respondents | County Population as Percentage of HSTCC's Total Population |
|---|---|---|
| **Barton** | 5% | 6% |
| **Jasper** | 67% | 56% |
| **McDonald** | 4% | 11% |
| **Newton** | 24% | 28% |

(Data source: MoBroadbandNow – Residential Survey, 2011)

## 1.2. Residential internet types, applications and satisfaction:

### Internet Types

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 in Table 3. The most prominent service is DSL with 35% responders utilizing this type of provision followed by cable modem (28%), dial-up (8%) fixed wireless (5%). Dial-up and satellite (not always a broadband) account for only 11% of the home internet connection (compared to 15% state average) indicating a significant portion of the households access the internet in the Harry S Truman region are probably using broadband.

**Table 3: Types of Internet services used in HSTCC households (87% of the total 400 households surveyed reported having Internet)**

| Type of Service | HSTCC Survey Response | Survey response for the State |
|---|---|---|
| **Dial-up** | 8% | 9% |
| **Satellite Internet service** | 3% | 6% |
| **Cable modem** | 28% | 20% |
| **Cellular Broadband (air card)** | 4% | 4% |
| **DSL** | 35% | 37% |
| **Fixed Wireless** | 5% | 7% |
| *Other / Don't Know/ NR* | 4% | 5% |
| **Percentage with internet** | **87%** | **88%** |

(Data source: MoBroadbandNow – Residential Survey, 2011)

### Internet Applications

Respondents were asked to indicate the purposes for which they used internet (broadband). This use of internet can be at home or elsewhere (school, public library, work or elsewhere) and those without residential internet at home also answered this question. Those that had access to the Internet and broadband (home or elsewhere) indicated a variety of applications and purposes of internet over a week's time frame, as shown in Table 4 below.

**Table 4: Internet use for various activities in HSTCC as compared to Missouri and U.S. averages**

| Activities | HSTCC Region | Rural Missouri | Non-rural Missouri | Missouri Average | National Average (Pew Center) |
|---|---|---|---|---|---|
| Keep in touch with family and friends | 88% | 89% | 88% | 88% | -- |
| Look for information about a service/ product you are thinking of buying | 82% | 86% | 83% | 84% | 78% |
| Look for health or medical information | 65% | 70% | 68% | 69% | 83% |
| Buy something online | 55% | 66% | 62% | 64% | 71% |
| Look online for news or information about politics | 66% | 66% | 66% | 66% | 76% |
| Use an online social networking site like Facebook or LinkedIn | 68% | 65% | 64% | 65% | 65% |
| Do any online banking | 64% | 63% | 66% | 64% | 61% |
| Visit your state, region or local government's website | 37% | 46% | 42% | 44% | 67% |
| Watch television or other videos | 50% | 40% | 49% | 44% | 71% |
| Play online video games | 38% | 34% | 36% | 35% | 36% |
| Look online for information about a job | 31% | 33% | 30% | 31% | 56% |
| Take a class or do homework | 25% | 24% | 20% | 22% | -- |
| Work from home (telecommuting) | 25% | 24% | 26% | 25% | -- |
| Contribute to a website, blog or other online forum | 27% | 21% | 24% | 22% | 32% |
| Look for information about a place to live | 20% | 20% | 20% | 20% | 39% |
| Share something online that you created yourself | 21% | 19% | 19% | 19% | 30% |
| Operate or support a home-based business | 14% | 17% | 13% | 15% | -- |
| Sell something online | 18% | 17% | 14% | 15% | 15% |

(Data source: MoBroadbandNow- Residential Survey, 2011)

The above chart shows a high degree of Internet use for personal communications, health and product information, transactions, access to news, and social networking. These are fairly consistent with national trends. There are several areas to point out. Some areas of significant lower use than the national average were: Visit government websites (30% lower), look for job (25% lower), and watch TV online (21% lower). Overwhelming 93% of the respondents had e-mail address and 69% of them used it at least once a day. These rates were lower for those who did not have internet access at home than for those with internet access at home as shown in Table 5 below. However, given the fact that 40% of the respondents without internet access at home access internet elsewhere to check their e-mail at least once a day, it might indicate that if internet is available and is accessible (based on cost and quality of internet speed) many of the respondents would probably adopt internet at home as well. Table 6 shows the major places other than home for internet access.

**Table 5: E-mail use by those with internet and without Internet at home in HSTCC.**

| Access Variables | Do you have internet at home? | |
|---|---|---|
| | Yes, I do. | No, I don't |
| Have e-mail address? | 99% | 53% |
| Access e-mail at least once a day? | 72% | 40% |
| Do you access internet elsewhere other than home? | 71% | 64% |

**Table 6: Place for Internet access for those who access internet elsewhere than home**

| Where do you access Internet other than home? | Do you have internet at home? | |
|---|---|---|
| | Yes, I have internet at home | No, I don't have internet at home |
| Access internet at work | 85% | 73% |
| Access internet at school | 42% | 30% |
| Access internet at public library | 29% | 58% |
| Access internet at relatives/ friend's house or other house in the community | 59% | 70% |
| Access internet at retail shop | 43% | 41% |
| Access mobile internet | 59% | 33% |

**Internet Services Satisfaction**

Those that had access to the Internet (including broadband connection) were asked to indicate their satisfaction with certain characteristics of their service and the results are presented in Table 6 along with the state level comparison. The respondents of HSTCC region indicated their level of satisfaction to be higher than the state average in each of the six characteristics of internet and related services listed in Table 7 (for further detail see regional markup). Within the region, the percentage of internet users that are dissatisfied in highest for lack of provider choices (42%) followed by cost (37%) and speed of connection (24%).

**Table 7: Satisfaction with their internet service and provider for residential survey respondents**

| Services | Very Satisfied or Satisfied* | Very Dissatisfied or Dissatisfied |
|---|---|---|
| *Speed of the on-line connection* | 75% (+7%) | 24% (-7%) |
| *Cost of internet/network service* | 61% (+10%) | 37% (-10%) |
| *Reliable access to the Internet* | 81% (+5%) | 17% (-6%) |
| *Ease of use* | 89% (+3%) | 10% (-3%) |
| *Customer Service Representative's knowledge when you call for service* | 69% (+5%) | 17% (-5%) |
| *Number of providers in your area to choose from* | 39% (+12%) | 42% (-11%) |

Data source: *MoBroadbandNow* – Residential Survey, 2011)

*Figures in the parentheses are the difference compared to state level responses; Negative values indicate regional percentages less than the state percentage.

## 1.2. Broadband and related technology and service adoption:

Respondents were asked a number of questions related to broadband adoption. The responses to these broadband adoption inquiries are profiled below for a number of key categories. Where pertinent, a National and State comparison is also provided. The full results of the residential broadband/high-speed internet survey for the Harry S Truman region are found in the Mark-up document posted on the *MoBroadbandNow* website under the Regional Planning tab.

As indicated in table 8, little less than one third (29%) of all respondents are relatively new broadband adopters (adopted within past three years) compared to just 6% new computer adopters during the same period. The new households with broadband adoption (in 1-3 years) in the region are lower than the state average for the same period (37%) indicating the fact that households in the region are early adopters of broadband compared to Missouri households on an average. For the 10% of respondents who do not own a computer, the main reasons, and thus challenges to computer technology adoption are: 1) They don't want or need a computer; 2) Concerns with safety / security; and 3) cost of computer, (see mark ups for detail). Similarly, for the 13% of households that do not have internet access, the three main reasons are: 1) Cost of internet, 2) Don't own a computer or 3) Computer safety, privacy and, 4) Unavailability of high speed internet or can't get the kind of connection they wanted.

**Table 8: Time Line for Computer and Broadband Adoption in HSTCC**

| Time line | Region | | Missouri | |
|---|---|---|---|---|
| | Computer | Broadband | Computer | Broadband |
| Less than one year | 1% | 6% | 2% | 9% |
| 1-3 years | 5% | 23% | 5% | 28% |
| 4-7 years | 14% | 38% | 14% | 33% |
| 8-10 years | 17% | 19% | 17% | 13% |
| More than 10 years | 63% | 9% | 62% | 13% |
| Don't Know/ NA | - | 5% | - | 5% |

(Data source: MoBroadbandNow – Residential Survey, 2011)

The computer and internet adoption in the region both are a percentage point lower than the average adoption at the state level; however, broadband internet adoption is higher (by 2%) in the region compared to the state average (see Table 9). The rural residents in the region have about 30% lower broadband adoption than the non-rural residents in the region, indicating digital divide in HSTCC region and this divide is higher than state average rural non-rural divide (19%). Based on the adoption rates presented in table 8, only 16% of the households in the region that currently have internet are not using broadband to connect to the internet but this percentage is higher for rural households in the region (38%) compared just non-rural (9%). This reflects the potential for the providers to expand services particularly in the rural region.

**Table 9: Digital divide based on types of residency in the HSTCC**

| Self-Identified type of residence | Computer Ownership | Internet Adoption | Broadband Adoption* | Internet adoption among computer owners | Broadband adoption among those who have a computer | Broadband adoption among those who have the Internet |
|---|---|---|---|---|---|---|
| Harry S Truman Coordinating Council (HSTCC) | | | | | | |
| *Region average* | 90% | 87% | 73% | 92% | 77% | 84% |
| Rural | 89% | 83% | 51% | 88% | 55% | 62% |
| Non-rural | 92% | 89% | 81% | 93% | 85% | 91% |
| Missouri | | | | | | |
| *Missouri average* | 91% | 88% | 71% | 94% | 75% | 80% |
| Rural | 93% | 88% | 63% | 92% | 66% | 71% |
| Non-rural | 91% | 89% | 82% | 96% | 88% | 91% |

(Data source: MoBB-ResSurvey, 2011)

*All Internet connections that are not dial-up and satellite based on 2011 survey irrespective of the speed are considered as broadband.

Apart from the type of residency (as indicated in table 9 above), income, and household type (based on having kids) are important determinant for adoption of broadband in the regions. Households with higher income and with kids tend to have higher adoption internet and broadband, but the differential across different categories is higher for broadband adoption than for internet (see Table 10). Surprisingly, even though the percentage of non-white who have internet is lower than the white households, the rate of broadband adoption is higher for non-white households by a percentage point. This is due to the fact that very small number of non-white households (n= 28) returned the survey (which is 7% of the total respondents n=400) and of these n=24 reported to have internet of which =18 (75%) indicated to have broadband.

**Table 10: Digital divide across household types in the HSTCC**

| Adoption | Household Income (annual) | | | | | Have Kids? | | Race | |
|---|---|---|---|---|---|---|---|---|---|
| | Very High | High | Medium | Low | Very Low | Yes | No | White | Other |
| | >$74,999 | $50, 000 to $74,999 | $30, 000 to $49,999 | $10, 000 to $29,999 | < $10,000 | | | | |
| **Internet** | 99% | 89% | 89% | 77% | 56% | 93% | 83% | 88% | 83% |
| **Broadband** | 86% | 87% | 73% | 58% | 44% | 84% | 67% | 74% | 75% |

## 1.3. Broadband availability and access:

Access is more than availability and also relates to other aspects of service beyond just physical access, such as access to choices, cost of services and quality of service accessible and available. Regional respondents (both with and without internet connection at home) when asked about what characteristic is most important for them to have a choice concerning broadband services they ranked *Cost of Service* as first, second was *Speed of Service*, and third was *Type of Service*. An actual choice in Providers was ranked last.

Similarly, respondents who already had internet were also asked about the reason/s for choosing certain type of internet service and the respondents noted several reasons but 47% of survey respondents indicated that the reason that they 'chose' a certain connection type and service provider was because of the speed of connection (see Table 11) which is 12% higher than state average. Top three providers in the region, as indicated in the survey were AT&T, CableOne and SuddenLink.

**Table 11: Reason for choosing certain type of internet service by households with internet**

| Reason for choosing certain internet type | Percentage of respondents in HSTCC | Percentage of respondents in Missouri |
|---|---|---|
| Only available service | 18% | 27% |
| Speed | 47% | 35% |
| Cost | 20% | 21% |
| Most reliable in the area | 11% | 13% |
| Other / NR | 4% | 4% |

For the Harry S Truman region basic broadband access and coverage lesser concern as only McDonald County has 5% of households with no provider (and just 3% households with only one provider) and remaining the three counties all households with at least one or more providers. All counties are in the region are ranked within above at least 53rd or higher (with Newton and Jasper counties above 90th in rank) in percentage of households with no known provider (see table 12) and have above state average percentage of households served (one known or no providers) as indicated by the ranking based on the underserved rank in Table 12 and figure 1.

**Table 12: Household based provider coverage within the HSTCC region.**

| *County* | Total Number of Households | % Households with No Known Provider | State Rank Unserved | % Households with only 1 Known Provider | Total % of Households with 1 or No Providers | State Rank Under Served |
|---|---|---|---|---|---|---|
| **Barton** | 5,600 | 0% | 76 | 1% | 1% | 67 |
| **Jasper** | 50,668 | 0% | 93 | <1% | <1% | 93 |
| **McDonald** | 9,925 | 5% | 53 | 3% | 3% | 45 |
| **Newton** | 24,313 | 0% | 90 | < 1% | < 1% | 90 |

Source: MoBroadbandNow – Mapping 2011

The second most common reason for choosing an internet service was cost. Specifically, just 20% indicated that they chose their connection type and service provider based on cost. In spite of the fact that availability (based on the provider coverage maps in Figure 1 and Figure 2) should not be a major obstacle in the broadband adoption. Given the fact that only 73% of Harry S Truman residents access the internet utilizing broadband, this leaves more than a quarter of the households without access to broadband service and thus adoption is still a concern. Respondents were asked about how much they pay for internet service. The households on an average in the region paid $ 37/ month for their internet service which is lower than the state average ($ 41/ month). However, given the fact that 84% households with internet have broadband access in the region compared to 80% of state average, the households in the region have internet service (in terms of speed) that is superior to the state average but pay at $ 4 less than the state average per month for the service. A final element associated with cost is that it was the number one reason (9%) cited by those that do not have current internet service as the reason for non-adoption (see regional mark-up).

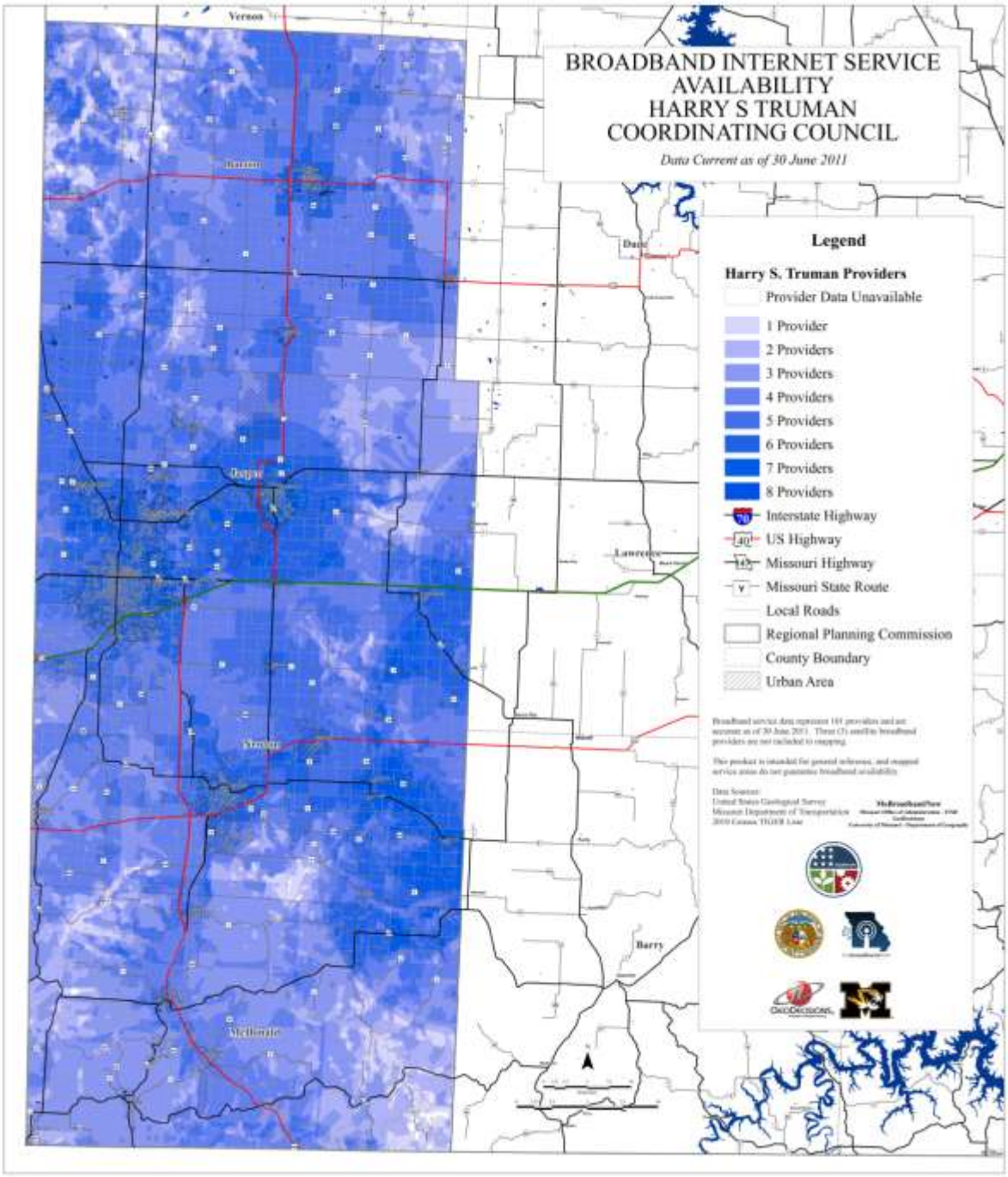



**Figure 2: Access shown as number of providers for Harry S Truman region. Darker blue hues mean more providers service that area.**

The third most common reason for choosing an internet service was cited as *only available provider*. Specifically, 18% indicated that they chose their connection type and service for the fact that that was the only available service in their area. As can be seen in Figure 2 below, the region is fairly well covered with broadband of higher speeds (blue). Both the yellow and red show areas within which slower speeds (less than 3 Mbps/1Mbps) can be found – particularly in eastern portions of the regions counties.

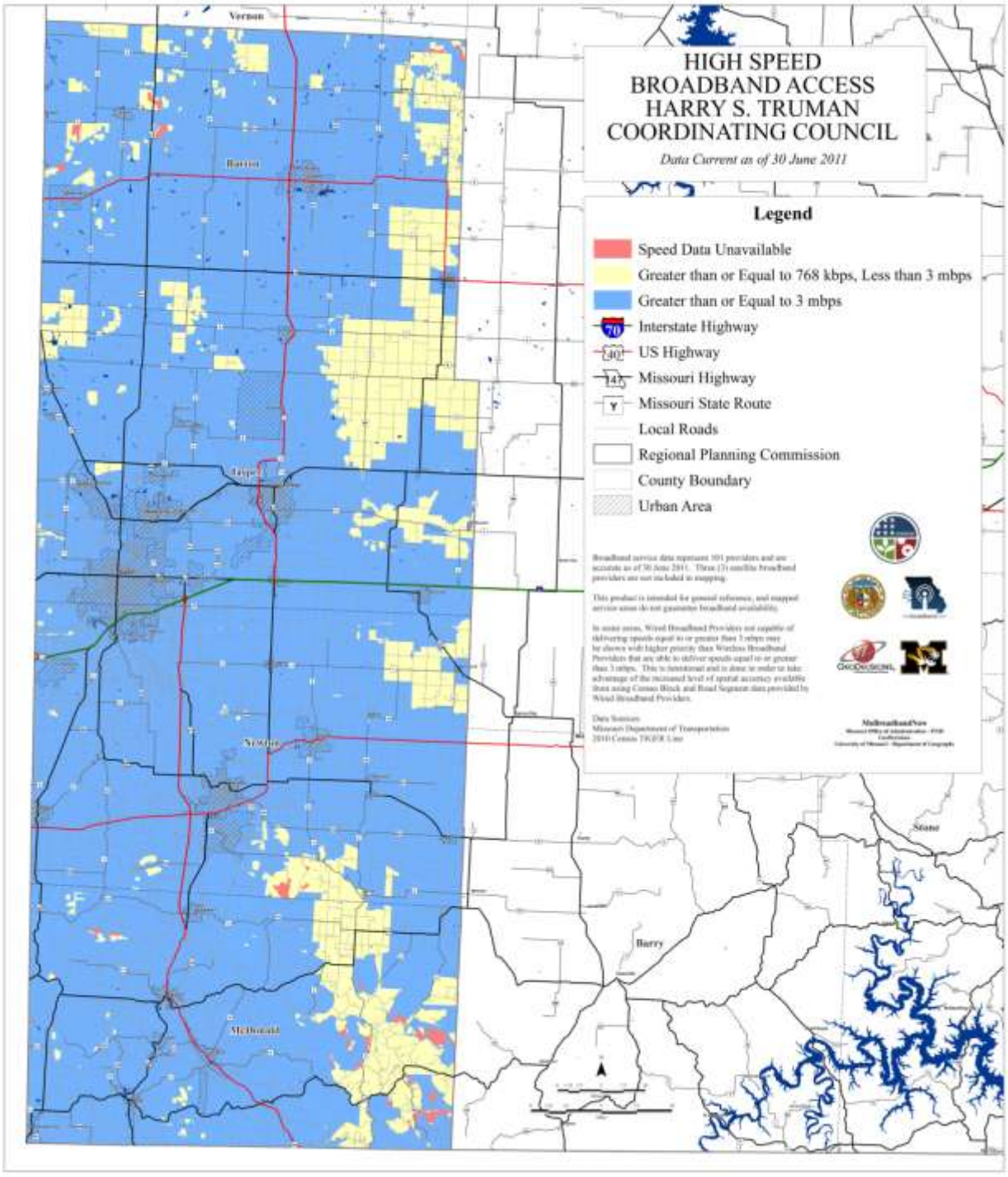



**Figure 3: Speed tiers for Harry S Truman region. Red = Provider service unknown; Yellow = Provider service speeds less than 3 Mbps; and Blue = Provider speeds equal to or greater than 3 Mbps.**

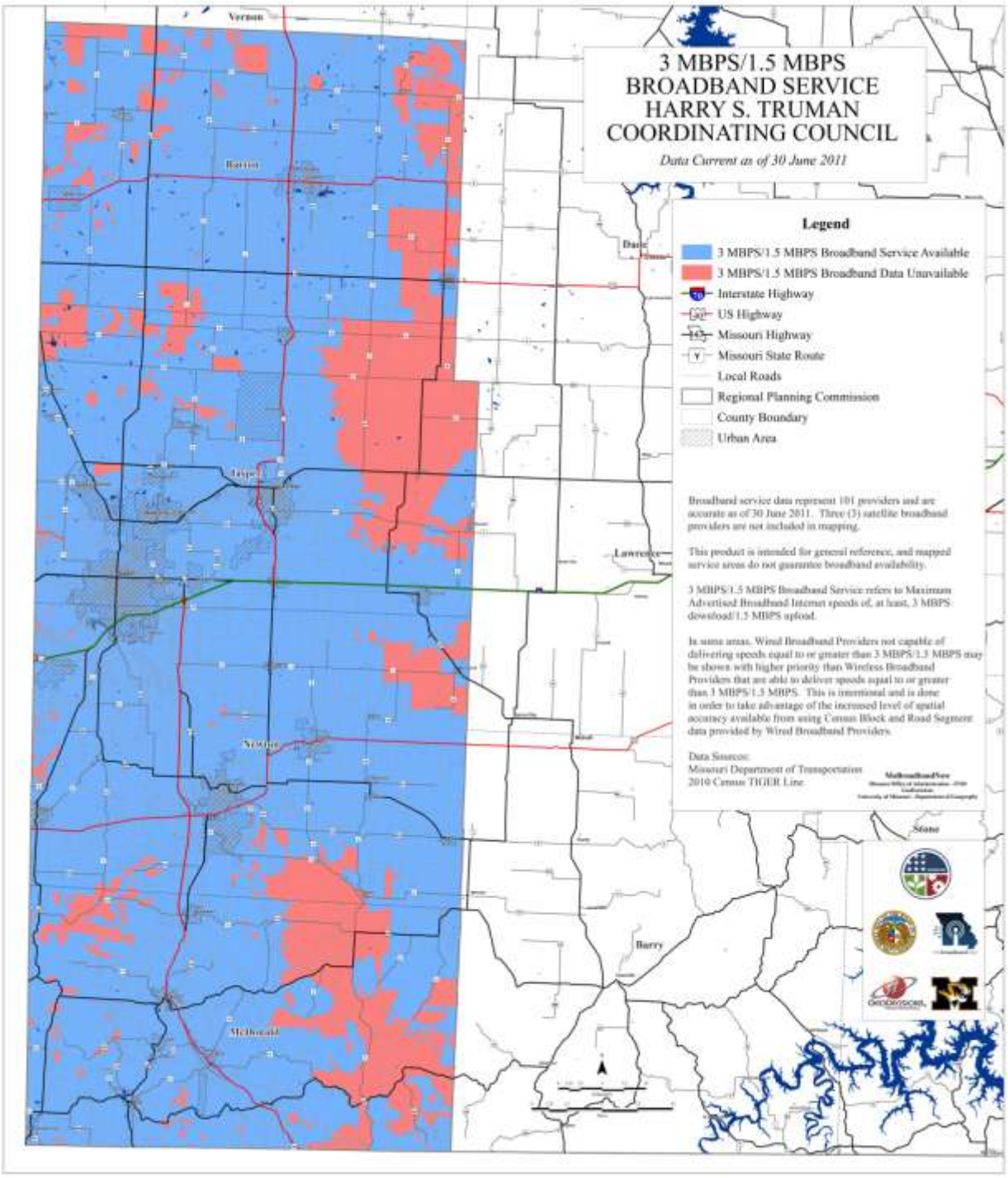



**Figure 4: High Speed tiers for Harry S Truman region. Red = Provider service unknown or service speeds less than 3 Mbps; and Blue = Provider speeds equal to or greater than 3 Mbps.**

Other reasons, apart from cost, for the lack of adoption of broadband Internet service are related to a lack of ownership of computers, lack of access to a high-speed Internet service, lack of knowledge about the set-up, choice, use of internet as well as due to the lack of value placed in the internet and safety and privacy issues related to internet. 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. Finally, in the Harry S Truman region, digital literacy and relevance issues were on par with the rest of state in that

22% of respondents indicated that access to computers and the internet was either *somewhat important* or *not at all important* and an additional 9% stated they *didn't know* if it was important. It is important to note that 49% of all regional respondents stated that it was *Very important* or *important* that all residents of Missouri have access to computers and the Internet. The broadband adoption is likely to increase with digital literacy that will change the current non-adaptors in places that already have broadband availability.

According to the Federal Communications Commission (FCC), the broadband (speed combination of download > 3mbps, upload >0.768 mbps) is available to 96% of the households in the region availability statistics for each of the counties in the region is as presented in Table 13. The availability statistics of 96% households is comparable to the state average of 96.6% households and Governor Nixon's 95% target at the state level by 2014.

**Table 13: Availability of Broadband for counties and HSTCC region***

| County | % of the population that have access to Broadband | % of the total region's population | % of the households that have access to Broadband | % of the total region's households | % of population in HSTCC that have access to Broadband | % of the households in HSTCC that have access to Broadband |
|---|---|---|---|---|---|---|
| **Barton** | 97.6% | 6% | 97.6% | 6% | 96% | 96% |
| **Jasper** | 98.3% | 56% | 98.3% | 56% | | |
| **McDonald** | 81.5% | 11% | 80.3% | 10% | | |
| **Newton** | 98.7% | 28% | 98.7% | 27% | | |
| **State of Missouri** | | | | | 96.9% | 96.6% |

*Data source: FCC National Mapping Project. The regional rates are population (or household) weighted averages. Broadband here is defined as speed combination of Download>3mbps, Upload>0.768mbps.

As indicated by the broadband availability (96%) and conservative estimate (all connections that are not dial-up or satellite considered broadband) of broadband adoption (73%), the differential between availability and actual adoption is substantial (23%).

**Figure 5: Residential Sector SWOC for HSTCC**

<table>
<tr><th colspan="2">Residential Sector</th></tr>
<tr><th>STRENGTHS</th><th>WEAKNESSES</th></tr>
<tr><td><u>Internet Adoption</u><ul><li>Almost 87% of households (HHs) have internet access at home and 29% of these HHs were connected with broadband in the last 3 years.</li></ul><u>Broadband Adoption</u><ul><li>73% of residents access the Internet via broadband (satellite not included).</li></ul><u>Applications Accessed via internet</u><ul><li>Internet is used for a variety of purposes such as keeping in touch (88%); searching for services or products they want to purchase (82%), buying items online (55%), accessing social networking sites (68%); looking for medical information (65%)</li><li>Other uses include looking at current news and politics (66%), online banking (64%) etc.</li><li>91% of residences reported having an e-mail account and 69% of then access e-mail at least once a day.</li></ul></td><td><u>Internet Access, cost and speed</u><ul><li>13% of HHs do not have internet access at all.</li><li>About 8% of the HHs access internet through dial-up (at least 14 times slower than the 768 Kbps minimum Broadband speed) and 3% use satellite connections.</li><li>About 42% of the HHs are either dissatisfied or very dissatisfied with the number of providers (choices) they have.</li><li>About 17% of the HHs are either dissatisfied or very dissatisfied with the reliability of internet.</li><li>About 37% of the HHs are either dissatisfied or very dissatisfied with the cost of internet.</li></ul></td></tr>
<tr><th>OPPORTUNITIES</th><th>CHALLENGES</th></tr>
<tr><td><u>Computer Ownership</u><ul><li>90% of respondents own a computer and most value their computer ownership.</li></ul><u>Internet Access/ Types</u><ul><li>Has the potential to expand internet access to 17% of HHs without internet (including 3% of the household with computer but no internet) and upgraded the speeds of 11% of the HHs (currently using dial-up or satellite connections).</li><li>Build on the bases of the residents that value Internet access, but don’t have BB.</li></ul><u>Others</u><ul><li>29% of the residents with computer at home and 64% residents without internet at home use internet elsewhere. Build on this base of residents that value Internet access but do not have technology or access at home.</li></ul></td><td><u>Computer Ownership</u><ul><li>10% of respondents do not own a computer; the three main reasons are (a) they don’t want/ need one (b) the cost is too high and (c) their security/privacy/ computer safety (virus).</li></ul><u>Internet Access, cost and speed</u><ul><li>13% of HHs do not have internet access. Three main reasons are (a) cost (b) lack of a computer at home; and (c) safety/ security/ privacy.</li><li>At least 24% (residents with internet plus residents with dial-up or satellite) of residents do not access the Internet via broadband (not counting satellite as BB). Take measures to expand existing broadband providers' footprint or service area.</li><li>HHs report cost (76%) and speed (66%) to be the most important choices for broadband service. How do we expand broadband and, at the same time, make it more affordable?</li></ul><u>Perception on BB Importance by Residents</u><ul><li>17% of residents feel that BB access is either not at all important (8%) or don’t know how important access to BB is (9%). Counter such perceptions through computer related IT literacy/ training.</li></ul></td></tr>
</table>

# *Business Survey Results*

The number of businesses within the four-county Harry S Truman region is 4,899 which is 3.24% of the total number of businesses in Missouri (n=150,892). During the on-line business community survey implementation from March through July 2011, 23 local businesses responded to the survey and answered 32 questions about broadband or high-speed Internet services they use in the Harry S Truman region.

### *Geography, Sector and Employee Size Distribution of Businesses*

A review of the business responses shows a significantly higher than expected regional actual response in Barton and McDonald counties while the business community responses from other two counties, Jasper and Newton, were much lower than expected (see Table 14).

**Table 14: Business responses and total businesses by county in HSTCC**

| County | Percentage of total business survey respondents (n=23) | Percentage of total businesses in HSTCC* (N=4,899) |
|---|---|---|
| **Barton** | 22% | 6% |
| **Jasper** | 43% | 62% |
| **McDonald** | 26% | 6% |
| **Newton** | 9% | 26% |

(Data source: MoBroadbandNow – Business Survey, 2011)
*County Business Pattern, 2009 (US Census Bureau)

Unlike other regions where the (*1-4 employee*) size businesses had the highest rate of business response, this region had *(5-25 employee)* size businesses with highest response rate (48%) which was higher than the actual number of the small businesses in that size in the region (see Table 15). The survey provided a forum for the discussion of this topic.

**Table 15: Business Reponses by size of businesses**

| Size of business employment for surveyed businesses HSTCC | Percentage of businesses Surveyed (n=23) | | Size of business employment for all businesses in HSTCC* | Percentage of total businesses in HSTCC (N=4,899) |
|---|---|---|---|---|
| 1-4 employees | 30% | | 1-4 employees | 53% |
| 5-25 employees | 48% | | 5-19 employees | 34% |
| 26-100 employees | 9% | | 20-99 employees | 11% |
| 101-500 employees | 13% | | 100 and more employees | 2% |
| 501 and more employees | 0% | | | |

(Data source: MoBroadbandNow – Business Survey, 2011)
*County Business Pattern, 2009 (US Census Bureau)

The response to the on-line business survey came from a variety of different types of businesses according to their North American Industry Classification System (NAICS) class as shown below. This diversity provides a good basis for determining the overall needs of the Harry S Truman business community as they relate to broadband. The sectors with high number of responses were *Healthcare and Social Services (42%), followed by Manufacturing and Professional, Scientific and Technical Services* each with 11% businesses of the total responses (see Table 16). The business survey was an online survey opens to any businesses, and number of responses did not correspond to the actual number of businesses in the sectors in the region. However, it is believed that the responses provided are useful in understanding the current status and concerns of the businesses in the regions with regard to broadband availability and adoption.

**Table 16: Business Survey Responses by NAICs sectors with total businesses by sectors**

| NAICS | National Business Classification | Percentage of the total business survey respondents of the total in HSTCC (n=23) | Percentage of total businesses in HSTCC* (N=4,899) |
|---|---|---|---|
| 11 | Agriculture, Forestry, Fishing and Hunting | 5% | 0.24% |
| 21 | Mining, Quarrying, and Oil and Gas Extraction | 0% | 0.18% |
| 22 | Utilities | 0% | 0.37% |
| 23 | Construction | 0% | 8.76% |
| 31 | Manufacturing | 11% | 6.14% |
| 42 | Wholesale Trade | 0% | 4.59% |
| 44 | Retail Trade | 5% | 17.60% |
| 48 | Transportation and Warehousing | 5% | 4.59% |
| 51 | Information | 5% | 1.45% |
| 52 | Finance and Insurance | 5% | 7.31% |
| 53 | Real Estate and Rental and Leasing | 0% | 3.76% |
| 54 | Professional, Scientific and Technical Services | 11% | 5.84% |
| 55 | Management of companies and enterprises | 0% | 0.61% |
| 56 | Administrative and Support Services | 0% | 3.49% |
| 61 | Educational Services | 5% | 0.67% |
| 62 | Health Care and Social Assistance | 42% | 11.04% |
| 71 | Arts, Entertainment and Recreation | 5% | 1.20% |
| 72 | Accommodation and Food Services | 0% | 8.27% |
| Other (81 & 99) | Other and not classified | 0% | 13.88% |

*County Business Pattern, 2009

## Broadband Service and Technology Adoption

Most of the businesses (93%) of the Harry S Truman region business survey respondents reported having internet access which is to be somewhat expected as the survey instrument was internet based. About 37% of the businesses indicated they either had DSL. None of the businesses were on Dial-up and only 5% were using satellite connections (one caveat could be satellite broadband, which may or may

not be a broadband, as defined by the NTIA, connection unless it is a business class link). As indicated in Table 17, 95% of the businesses had one or other form of broadband connection51% of the businesses had one or other form of broadband connection with the DSL being the most common, however, many businesses (44%) indicate that they had only one provider in their area (see figure 5).

**Table 17: Types of Internet Services Used**

| Types of Internet connection | Response Percent in HSTCC* (n=23) | Response Percent Missouri (n=1,182) | National Survey** (n=1,329) |
|---|---|---|---|
| **DSL** | 37% | 38% | 57% |
| **T-1** | 16% | 11% | - |
| **Cable Modem** | 11% | 8% | 34% |
| **Fiber to the Premises** | 21% | 8% | 7% |
| **Fixed Wireless** | 16% | 10% | 8% |
| **Satellite Broadband** | 5% | 8% | 5% |
| **Mobile Wireless** | 5% | 5% | 23% |
| **Dial-up Line - 56 Kbps or Less** | 0% | 8% | 8% |
| **Frame Relay/CIR** | 0% | 1% | - |

(Due to the definition of the types of connections used in the national level survey by FCC, the percentages are approximate comparison)
**Source: http://transition.fcc.gov/Daily_Releases/Daily_Business/2010/db1129/DA-10-2251A1.pdf

### *Importance of Broadband among Businesses*

When asked how important is a broadband connection to the day-to-day operations of their business, 94% chose either *Very Important* (88%) or *Important* (6%). Additionally, 100% indicated that while they currently had broadband, it would be beneficial to their business if broadband in the region were enhanced. The reasons given for this high response were related to the need for faster speeds of connection, support for Electronic Health Records, and easier access.

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 and business services go hand in hand.

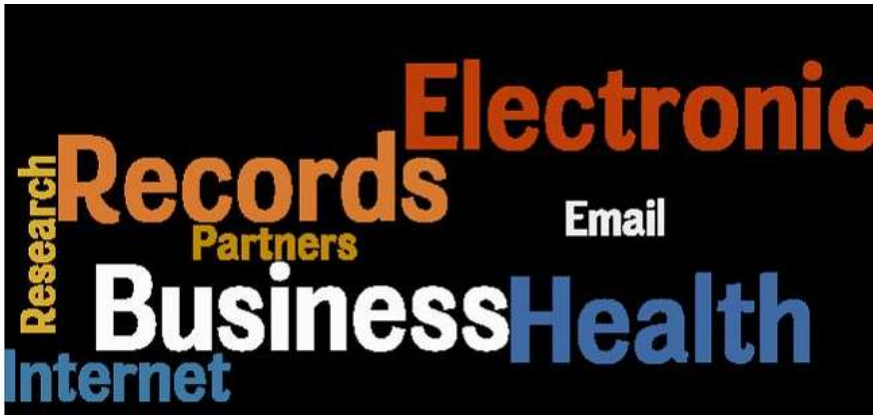



**Figure 6: *Wordle* of the Harry S Truman region's business survey respondent's comments to the question: "*Why is broadband important to business*".**

## Business Broadband Access and Availability

### *Broadband Business Providers*

A variety of providers in the Harry S Truman region, as shown in the chart below, provide high-speed internet service to businesses. Of the 22 providers reported in the business survey, the top two were AT&T (27%) and McDonald County Telephone (14%) and each of the other 5 providers as listed in Table 18, were the providers of 9% of the businesses in the region.

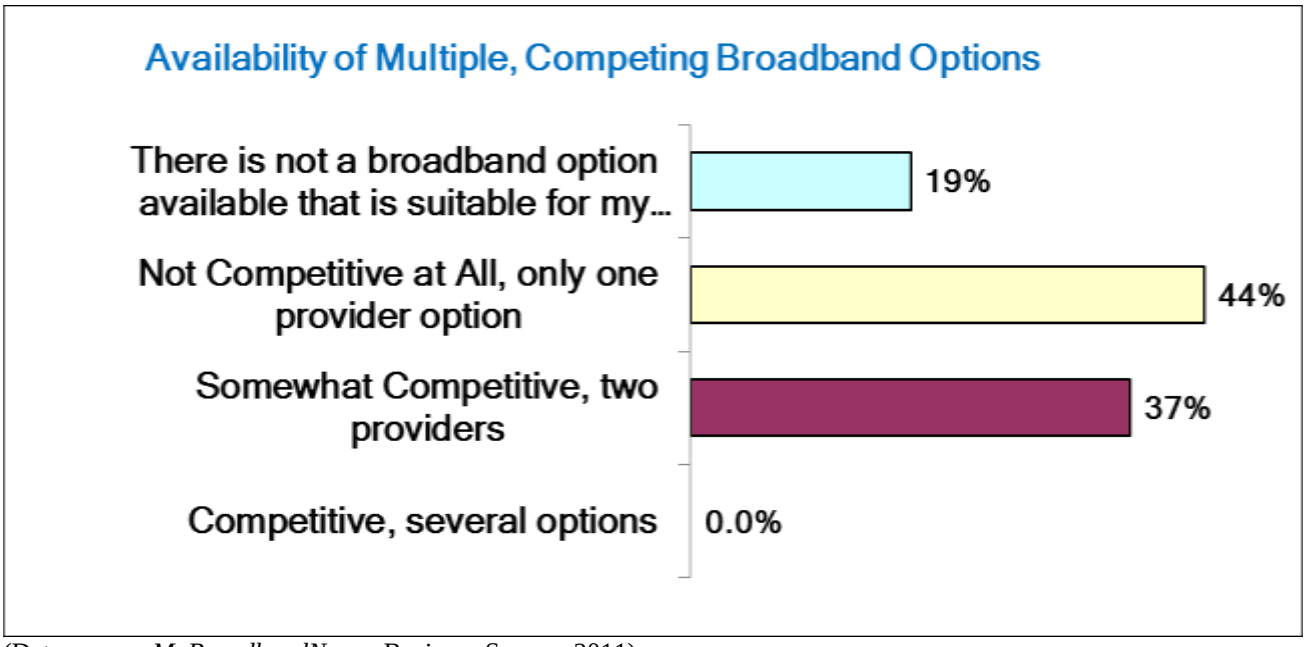
**Table 18: Top five Business broadband/ internet providers in the region**

| Business Broadband Providers (N=22) | Response Percent in HSTCC | Response State Top 5 |
|---|---|---|
| AT&T | 27% | CenturyTel or Century link |
| McDonald County Telephone | 14% | Socket |
| Pixius | 9% | AT&T |
| KEI Internet | 9% | Windstream |
| Seneca Telephone | 9% | Kingdom |
| Cable One | 9% | |
| eCarthage | 9% | |

(Data source: MoBroadbandNow – Business Survey, 2011)

### *Competitiveness of Commercial Broadband*

While a number of different providers serve the Harry S Truman business broadband marketplace, the majority of the businesses who participated in the survey indicated they had only one provider option (44%) or that there isn't an option suitable for their business (19%) as shown in Figure 5 below. This is contrary to the facts presented in the availability and available speed in the areas as indicated in Figure 1 and Figure 2 above.




(Data source: *MoBroadbandNow* – Business Survey, 2011)

**Figure 7: Broadband Competition in the Business Sector for the Harry S Truman region.**

### *Broadband Service Ratings*

Respondents to the Business Survey rated their provider in a number of categories, as shown below.

**Table 19: Satisfaction with their business Internet service and provider***

| Services | Very Satisfied or Satisfied | Dissatisfied or Very Dissatisfied |
|---|---|---|
| ***Cost of internet/network service*** | 47% (-13%) | 47% (+16%) |
| ***Speed of the on-line connection*** | 77% (+23%) | 23% (-22%) |
| ***Billing practices of your provider.*** | 88% (+7%) | 6% (-3%) |
| ***Reliable access to the Internet*** | 65% (-8%) | 35% (+8%) |
| ***Training and technical support*** | 59% (-2%) | 29% (+5%) |
| ***Customer Service Representative's knowledge when you call for service*** | 71% (+7%) | 23% (-1%) |
| ***Installation technician's ability and courteousness*** | 76% (+2%) | 18% (+9%) |

(Data source: *MoBroadbandNow* – Business Survey, 2011)

*Figures in the parentheses are the difference when compared to state level responses; negative values indicate regional percentages less than the state percentage.

From the response presented in Table 19, the three largest areas of dissatisfaction were cost of internet (47%), reliability of internet access (35%), and training and speed of the connections (29%). Compared to the state average, this regions had higher dissatisfaction with the cost, reliability and training, technical support, and technician installation abilities and courteousness. Satisfaction for the speed was higher in the region for the businesses by 23% compared to state average. Even though 33% of the respondents did not know the how much they paid for the internet service, it surprising that 47% reported the most dissatisfaction with cost of service but all the businesses with internet paid more than $ 50 per month.

# Key Business Applications of Broadband

Table 20 below shows the key applications of the business survey respondents for use of the internet and broadband. E-mail is the number one application, followed by Website applications, file sharing and research. As compared to the state average, this region has more percentage of businesses using internet for all applications listed in Table 20.

**Table 20: Key Business application of Internet/ Broadband**

| Business Applications | HSTCC Response (n=23) | State Response (n=1,182) | National * | Percentages (n=3,459) |
|---|---|---|---|---|
| E-mail | 100% | 82% | To advertise or promote the company | 60% |
| Website applications | 88% | 56% | To conduct research | 7% |
| File sharing | 81% | 44% | To sell products of services through the company's website | 35% |
| Banking | 75% | 54% | To Buy products or supplies | 84% |
| On-line education | 69% | 34% | To watch video | 46% |
| Business to business functions | 63% | 35% | To bill or invoice customers | 39% |
| On-line customer support | 31% | 30% | | |
| Research | 81% | 43% | | |
| E-business | 69% | 26% | | |
| On-line appointments | 38% | 23% | | |
| Monitoring functions (energy, security, etc.) | 63% | 15% | | |
| Videoconferencing | 38% | 19% | | |
| Internet telephone | 38% | 14% | | |

*(Data source: MoBroadbandNow – Business Survey, 2011)

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

**Figure 6: Business Sector SWOC (participants=23)**

## Business Sector

### STRENGTHS

**Internet Access**

- 95% of the 23 businesses that took the survey have Internet access at their business that is provided by 10 different providers.

**Cost, speed and reliability of internet**

- 48% of businesses are satisfied with the cost they pay for internet; nearly 77% are satisfied with the speed of connection.
- Nearly 65% of respondents say they are satisfied with the internet connection's reliability.

**Installation Technician's Ability and Courteousness**

- Nearly 76% of respondents are satisfied with the installation technicians' ability and courteousness.

**Applications Accessed via Broadband**

- 100% of the responding businesses used e-mail; 88% used it for different web application; 75% for banking services; 81% for file sharing.
- Other current uses are: research (81%), video conferencing (38%), online customer services (38%), e-business (34%), etc.

### WEAKNESSES

**Broadband availability and choice:**

- One respondent didn't have internet connection; none of the businesses currently have dial-up; and 5% only have satellite connection.
- 44% of the businesses reported poor provider choice (having only a single provider).
- 19% of the businesses did not have BB options that are suitable for their business.
- Nearly 74% of businesses were not aware of the internet speed they have; 33% didn't know how much they pay for internet.

**Cost and Speed of Connection:**

- About 47% are dissatisfied with the cost, while 23% are dissatisfied with the speeds of their connections.

**Other comments:**

- Current connections are too slow to conduct business.

### OPPORTUNITIES

- Businesses are using internet for different cost reducing measures such as web applications (88%), video conferences (38%), and monitoring functions (63%).

**Speed of the On-line Connection**

- 37% of the businesses connect with DSL and 5% use satellite. Many want enhanced access. A potential exists for serving businesses enhanced access and an increased number of providers to choose from.

**Enhance Current Broadband Offerings**

- 100% of the businesses think that enhanced broadband would benefit their business. Target their need.
- 94% of respondents said broadband is important for the day-to-day operations of their business.

**Broadband Availability**

- Businesses understand broadband to increase efficiency, productivity and competitiveness.
- Broadband would make work easier and faster
- Faster broadband would allow businesses to further utilize the benefits of broadband service.
- It would be a great way to attract new business to Jasper.

### CHALLENGES

**Broadband Availability/ Speed**

- Make it affordable (need more high speed lines in the rural areas).
- Some businesses say they need direct fiber connection or something fast and dependable like 20M up and down minimum.
- Some think the government needs to take care of the smaller communities to keep them alive. If we had better communication we could probably attracted bigger business.

# *Sector Survey Results*

Institutional, organizational and business sector data concerning the sectors' broadband-related needs, interests, attitudes and opinions, was collected through various methods, including: Focus groups, Written Surveys, Interviews, and On-line surveys. Total of 11 sectors were represented in the sector survey as indicated in Table 21 below and this is lower than in many other regions where there were 15 sectors represented in the sector survey. In this region sectors like Agriculture, Economic Development, Community and Social Services and Workforce Development were not represented.

**Table 21: Sectors Represented, Number of Responses and SWOC Votes for Each Sectors**

| | Sector Name | Surveys Received | Number of SWOC Votes* | | | | |
|---|---|---|---|---|---|---|---|
| | | | S | W | O | C | Total |
| 1 | K-12 Education | 13 | 5 | 0 | 9 | 13 | **27 (1)** |
| 2 | Higher Education | 13 | 5 | 1 | 3 | 10 | **19 (3)** |
| 3 | Public Safety | 11 | 4 | 6 | 2 | 5 | **17 (4)** |
| 4 | Tourism | 10 | 4 | 0 | 3 | 1 | **8** |
| 5 | Libraries | 9 | 5 | 5 | 3 | 2 | **15 (5)** |
| 6 | Industry and Manufacturing | 7 | 1 | 0 | 3 | 5 | **9** |
| 7 | Business & Professional Services | 7 | 0 | 0 | 6 | 2 | **8** |
| 8 | Environment Sector | 6 | 1 | 0 | 1 | 7 | **9** |
| 9 | Healthcare | 3 | 2 | 1 | 10 | 10 | **23 (2)** |
| 10 | Energy Sector | 1 | 2 | 0 | 0 | 13 | **15** |
| 11 | Local Government | 1 | 3 | 1 | 1 | 2 | **7** |
| **Total** | | **81** | **32 (3)** | **14 (4)** | **41 (2)** | **70 (1)** | **157** |

*Figures in the parentheses are top five sectors ranking based on SWOC voting in the region.

This region, based on the collective analysis of all the 11 sectors (and 81 businesses/ agencies) that responded to the sector surveys, indicate that the region as a whole sees more ***Strengths*** (32 votes which is 20% of the total votes) than ***Weaknesses*** (9% of the total votes) and more ***Challenges*** (45% of the total votes) than ***Opportunities*** (26% of the total votes) pertaining to broadband access, availability and adoption by different sectors. The collective analysis based on the total SWOC votes holds true for many sectors, however, some sectors stand out different with more positive (strengths and opportunities ) than negative (weaknesses and challenges). In this regard, the sector surveys were analyzed to determine both common and divergent themes that emerged from the sectors concerning broadband availability, adoption and key applications. Each sector was analyzed individually. Then, as the information was reviewed during the 2nd full RTPT in-person meeting, common themes, key applications and problems related to specific sectors and divergent themes are profiled in this report.

## Common Themes

A number of common themes emerged across sectors (either all or most sectors) related to broadband availability and adoption. The major ones are:

- **Broadband use to support and improve essential services like education, public safety and healthcare in the Harry S Truman region is the top priority.** All sectors in the region, like other regions of the state consider addressing broadband availability and adoption an important priority for the region. Regional focus though was defined for Education (K-12, Higher

Education and Libraries), Healthcare and public safety (as respondents and participants focused on this sector as the key for developing broadband within the region based on the number of votes cast for these sectors, see table 21). Overall impression from most of the sectors is that cost is not a problem for now but availability (especially in rural areas) is a problem to start or run businesses. Broadband enables them to be more efficient and in providing better ways of providing services to customers and patrons.

- **It is vitally important to have the political support of the local governments to expand the availability and capacity of Broadband.** It needs to become a regional strength of HSTCC that the leadership in the local governments become actively engaged in the meetings and activities of the RTPT and are willing to provide leadership to the development of broadband both within their jurisdictions as well as outside them.
- **Broadband as it has been deployed to support Libraries and Higher Education is always going to be a regional strength that should be leveraged, maintained, and grown.** The impact, leadership, and support services exhibited and provided by MOREnet has prepositioned the region for addressing digital literacy elements, usage of technology, training, and has broadened access for the regional citizens who do not own a computer or have other sources for Internet access.
- **Federal mandates are directing a lot of broadband infrastructure development within the Health sector.** This physical build-out should be leveraged by the local communities that these hospitals and clinics serve so that other components of government, business, or residential service needs can be addressed.
- **The role of Broadband and its adoption and use in support of Public Safety at the regional level is typically seen as being one of the greatest areas of challenge.** In the HSTCC region 2/3 of the votes cast saw this area as either a *weakness* or *challenge*. The region does recognize its importance as it ranked in the top 4 for total votes. Its use in timely, secure transmission of data and information, aiding and supporting interoperable communications, and its future role in Next Generation 9-1-1 requires that any further challenges be addressed. This is a key area where 9-1-1 capabilities could leap-frog older technologies not yet implemented and finally move the state forward in this area.
- **Increasing digital literacy through outreach, education, and training.** Across most sectors and certainly across regions the issue of training in how to use these technologies and their relevance and impact to the citizen, government, business, or organization needs to be expanded through pro-active measures.
- **Technical support and services for governments, sector groups, businesses, and others that cannot afford their own network / broadband staff.** Many smaller municipalities and groups within the HSTCC and other regions have stated that it may not be the adoption itself being an issue but rather the ongoing support and knowledge base after implementation that needs to be in place within the organization that is a larger hurdle. Service groups such as MOREnet and other potential start-up businesses that can provide this type of technical skill and guidance to groups could create the bridge to wider adoption and enhanced implementations.
- **Ability to meet the minimum standard for effective application of Broadband technologies and applications.** Based on the sector surveys, the sectors can be grouped into two categories for the speed of the connections they currently have. Sectors that are part of the community anchor institutions (libraries, public safety) and K-12 education and majority of the Community and Social Services sector consider their current broadband access to meet their current

minimum standard, while majority of the respondents from sectors like Agriculture, Industry and Manufacturing, Tourism, Healthcare consider they do not meet their current minimum standard.

- **Broadband and efficiency.** All sector responses indicate or imply broadband enhances efficiency whether it be for private sector businesses (communication efficiency, video conferencing, websites, sales transactions, etc.) or other service based entities like hospitals, schools, libraries, or government agencies (online billing and payments, research, student / teacher / parent communications, voter registration, vehicle licensing, etc.).
- **Broadband availability in remote / rural areas:** For many sectors lack of affordable, reliable and appropriate broadband option in the rural areas was a concern. The responses from residential surveys, businesses survey and the sectors all indicate the need to work towards providing affordable broadband connection in rural areas so that one of the pre-requisites for economic activities to take place is there. Unless affordable broadband is available in rural areas residents, students, businesses and entrepreneurs in rural areas will not have level playing field to compete with the rest of the state and world. The need for rural availability was stressed by sectors like energy, education, health, tourism and others in the sector surveys.

The survey indicates that broadband is critical to the success of key operations of each Sector apart from common use of internet for e-mail and other forms of communication using internet. Every Sector indicated that there were at least one or two critical components of their operations that could not succeed without broadband and each sector had some problems with their current broadband connection or due to the lack of broadband connection in the region. The key application and problems related to broadband in the region for each of the sectors are listed in Table 23.

**Table 22: Key Broadband Application and Problems for Sectors**

| Sectors | Key Applications | Key Problems |
|---|---|---|
| **Business Professional Service** | Email, research, telecommuting, communications with vendors and customers, communication with field workers, and tracking shipments. Broadband is needed to keep up with available services, and to access massive amounts of graphics and streaming information. | Many businesses indicate technology related literacy issues need to be addressed (not only skill but also perception on the importance of broadband as 33% did not know if broadband is important or not). |
| **K-12 Education** | Web-based educational applications (instructions, research, library resources, student and other financial information system, library resources), cloud computing, accessing a virtualized environment. | Some educational and school services can't currently be accessed because of limited bandwidth. Access to student outside of the school (rural areas where they reside). |
| **Tourism** | Business webs-sites that help tourists (like online reservation), reports for travelers, meet guests expectation for fast and reliable internet access. | Limited access in some areas creates economic disadvantages it helps the ability to provide service to the tourists. |
| **Industry and Manufacturing** | Software downloads, VOIP, connection to corporate offices, communications with vendors and employees and customers, marketing, | Some of the participants reported that their broadband provider cannot provide the bandwidth they need and feel they could do more with a faster connection |

| | | |
|---|---|---|
| | and research. | that is affordable and competitive to spur new business. |
| **Local Government** | Online utility monitoring and billing; State & federal permitting; court uses; police incident tracking & reporting; GIS location of facilities out in the field; Police field reporting of tickets and suspect identification; and emergency services inter-operability during natural disasters. | Don't have right hardware and software for use of BB technology and the current broadband access and availability does currently meet minimum standard. No infrastructure in place to connect certain remote locations. Current process and procedure do not encourage bb technology. |
| **Libraries** | Help patrons especially those without access to internet elsewhere (for e-mail, job searches, homework research, social networking, and online classes), online public access catalog, staff access to online data bases, and circulation access over remote branches. | Libraries are okay in the current standard of access but access is not available to all areas where patrons live. Faster connectivity is needed for more efficient and effective operation. |
| **Energy Sector** | Operating the electric system in an efficient manner, with high speed communications to all electric facilities and member system offices. Broadband enables the installation of private communications networks to meet NERC and FERC standards. | Connectivity from high speed trunk lines to more rural areas is lacking in the region is; these last-mile connection issues need to be resolved. |
| **Healthcare** | GIS web server, running maps and applications for the health department, transferring electronic medical records, most operations are online; it allows the quick sharing of information between users. | Current technology is not adequate to transfer GIS data well. Many rural areas don't have high-speed service, making it difficult for employees and residents to access healthcare information from their homes. |
| **Environment Sector** | Means of communication (with other organizations, broad-members), website applications, extracting large files, research and education and outreach, webinars. | Speed is not good for applications like video conferencing. Rural areas are not represented without broadband, and some cannot be a part of the groups as without broadband communications eventually break down and people lose interest. More training and education is needed regarding BB technology. |
| **Public Safety** | Facilitates reverse 911 capabilities; obtain real-time weather information; dispatch to fire apparatus; communicating with victims and witnesses; data sharing between agencies; incident reporting; investigative purposes; more work completed in the field. | Wireless service is intermittent; current equipment is not equipped to handle increased data traffic. They need more training on mobile data and broadband technology. Access to rural locations and small agencies can be cost prohibitive. Need better wireless rates/plans. |
| **Higher Education** | Research, remote faculty/students communication, online classes, | 57% of participants reported that they do not have the right hardware, software |

| | | |
|---|---|---|
| | transfers of files and assignments, professional training, streaming audio and video. | and other tools in place for teaching and instructional purposes. Some rural students do not have access to high-speed at home. More bandwidth is needed as utilization continues to grow; it would allow students access to e-learning. |

## Divergent Themes

While many common issues related to broadband availability and adoption was found across sectors as noted above, there were also some divergent themes specific to one or several sectors based on an analysis of the information provided. These included:

- **Based on the SWOC voting for each of the sectors**
  - Public Safety is the only sector (out of 11 sectors) that indicated more *Weaknesses* than *Strengths*.
  - Only two sectors (Tourism and Business/Professional Services) had more *Opportunities* than *Challenges* that may come with better broadband environment.
- **Patron access to the internet** – While multiple entities indicated that lack of broadband availability or proper speed of connection was a problem for clients that they serve, two specific groups talked about problems for patrons at their location: those that run tourism related businesses and libraries. Moreover, for some of the patrons, libraries are the only place where they can access high speed internet. While most libraries have broadband to meet their business needs, businesses in the tourism sector had problems with both availability and affordability and indicated the need to expand mobile access to main tourist centers.
- **Need for affordable and reliable mobile / wireless access:** Sectors like Business and Professional Services, Public Safety expressed the importance of affordable and reliable mobile / wireless access.
- **Lack of redundancy** – This was a significant issue for those responding in the Small Business and Professional Services sectors. Specifically, respondents noted that as businesses and organizations come to rely on high-speed internet access for nearly all operations, there is then a concomitant need for redundancy to ensure 24/7 up-time for their connections and business continuity.
- **Challenges for future 1:** The impact, leadership, and support services exhibited and provided by MOREnet and DESE are critical for public libraries and K-12 institutions, however, any change in policy (or funding support) might jeopardize services and the positive impact these institutions have provided to communities particularly those that demand high-speed internet.
- **Challenges for future 2:** Based on the SWOC votes (in table 21), sectors like Energy, Education (both K-12 and Higher Education) and Healthcare were identified as sectors with the most challenges. The areas of challenges were identified as the lack of access in rural areas, costs to upgrade to better speeds, limited provider options, and digital literacy of their patrons/customers.
- **Some unique application for sectors** – A number of sectors talked about very specific application of high-speed access as being important (which means high capacity, highly reliable connections) some of sectors indicated the following as critical:
  - Healthcare – Broadband is critical for electronic records, GIS web server and running maps and applications for health department.
  - Business and Professional Services – Communicating with vendors, customers, field workers and tracking shipments.

- Energy Sector – high speed communications to all electric facilities and member system offices.
- Public Safety – Broadband provides real-time access to critical emergency and public safety related information (criminal records, outstanding warrants, weather reports, Amber Alerts, inter agency data sharing, dispatch to fire apparatus etc.).
- Public Libraries- Sharing of resources across libraries in the consortium of libraries though broadband supported automated system.
- Environment – Social networking, education and outreach.

***(For detailed sector specific information refer to the sector SWOC in the attachments)***

# *SWOC Analysis Regional Overview*

Some of the key strengths, weaknesses, opportunities and challenges as they relate to both broadband availability and adoption are listed below and are provided in more detailed in the SWOC Final Report included as an addendum to this document.

## Key Strengths of the Harry S Truman Regional Broadband Environment

1. **There is a substantial broadband user base to build upon** – Eighty three percent (87%) of the residents in this four county region have internet. There is room for upgrading current internet to high-speed internet for 16% of current internet users and 23% of the households with computer but no internet. Given, this gap in broadband adoption among current households with internet and the fact that 64% of the households without internet at home access internet elsewhere there is considerable potential for broadband expansion when affordable broadband options are available.
2. **Broadband adoption is growing in the region** – About 73% of residents' access the Internet via broadband and 29% of these broadband users adopted broadband just in the last 3 years. While there are some broadband availability issues related to the various providers' coverage areas (especially in McDonald County), percentage of households with broadband is rising in recent years.
3. **The key vote receiving sectors were Economic Development, Tourism, Libraries, Business and Professional Services and Local Government respectively in order of number of votes received.** The K-12 sector received the most number of responses and also the most number of votes on the SWOC matrix presented at the Regional Meeting. Since, strengths and opportunities indicate existing or potential good while weakness and challenges indicate existing or potential bad and total voting is not a good measure to ascertain strengths. The top five sectors with the most positive voting (S+O) are K-12 Education, Healthcare, Higher Education, Libraries and Tourism as indicated in Table 24. In terms of strengths alone, Libraries, K-12 Education and Higher Education stand out (see Table 16) indicating regional strengths of education related sectors when it comes to broadband adoption, availability and current use. Given the fact that these institutions already have better broadband connections and public funding to support them, strength ranking for these sectors is not surprising.

**Table 23: Positive, Negative and Total SWOC Votes for Each Sectors**

| Sector Name | Number of SWOC Votes* | | |
|---|---|---|---|
| | **Positive Votes** (S+O) | **Negative Votes** (W+C) | **Total Votes** (S+W+O+C) |
| K-12 Education | 14 (1) | 13 (1) | **27 (1)** |
| Higher Education | 8 (3) | 11 (3) | **19 (3)** |
| Public Safety | 6 | 11 (3) | **17 (4)** |
| Tourism | 7 (5) | 1 | 8 |
| Libraries | 8 (3) | 7 | **15 (5)** |
| Industry and Manufacturing | 4 | 5 | 9 |
| Business Professional Services | 0 | 8 | 8 |
| Environment Sector | 2 | 7 | 9 |
| Healthcare | 12 (2) | 11 (3) | **23 (2)** |
| Energy Sector | 2 | 13 (1) | **15 (5)** |
| Local Government | 4 | 3 | 7 |
| **Total** | **73** | **84** | **157** |

*Figures in the parentheses are top five sectors ranking based on SWOC voting in the region.

4. **There are many broadband/internet related applications already being well utilized by the residential, business and sectors in the region –** For example, more percentage of residents use internet for 9 of the 18 internet activities listed in Table 4, including social networking, online banking, watching TV/ video, playing online games, telecommuting, web-site contributions, sharing online something self-created, selling online where most of these application require good internet speed and digital literacy. Similarly, more percentage of businesses in this region use internet for different business applications that are listed in Table 20, and applications that particularly stand out as compared to state average are: monitoring function (48% higher than state average), e-business (43% higher than state average), research (38% higher than state average), use of file sharing (37% % higher than state average), and online education (35% higher than state average).

5. **There are large numbers of providers in the region** -While there is broadband availability issues related to the various providers' coverage areas (especially in McDonald County), the business noted 22 different providers being used in the region for Internet access and vast majority of businesses have internet access.

## Key Weaknesses of the Harry S Truman Regional Broadband Environment

As is seen in many SWOC analyses, weaknesses typically run counter to the strengths, and are expressed as problems, issues or concerns. After review of all of the needs assessment data and the SWOC voting by RTPT members, the following are the key weaknesses related to broadband in the Harry S Truman region.

1. **Over 27% of Harry S Truman residents do not have broadband service** – There are a number of reasons for this as noted in the Needs Assessment. First, 9% households find it too expensive, and 5% of households do not have a computer (so, many lack an end user device to access the internet). Additionally 13% of households do not have internet access at all and 16% of the households with internet do not connect to internet with broadband connection. Then, of those that do have internet access, 8% have dial-up and 3% use satellite connections (some of which do not constitute broadband connections under the FCC's and NTIA's current definition).
2. **Over 7% of Harry S Truman businesses do not have internet service and many do not have broadband connection –** Business community survey being an online survey, the percentage of businesses without internet is potentially higher than 7%. There are a number of reasons for this as noted in the Needs Assessment. First, 5% of the businesses use satellite connections (some of which do not constitute broadband connections under the FCC's and NTIA's current definition) and 19% of the businesses indicated no suitable broadband options for their business in their areas.
3. **Many residents and businesses are highly dissatisfied with connection speed** – About 42%, 37% and 24% of the households with internet are not satisfied with the provider choices they have, cost of internet service they pay and the speed of the on-line connection respectively. Similarly, nearly 44% of the businesses reported poor provider choice, 19% reported no suitable broadband options suitable for their business, 47% were dissatisfied with the cost and 23% were dissatisfied with the speed of the connection they have at their business (see Table 19 and Figure 5). All of these dissatisfactions together constitute weaknesses of the region in providing affordable, business suitable and reliable broadband option.
4. **The SWOC voting shows 9% of the total votes were for weaknesses for different sectors in the region. This percentage is more than 54% when weakness and challenges are combined –** In spite of some sector specific strengths in the regions (particularly for library and education related intuitions), the RPC meeting participants believe there to be several

weaknesses in the region particularly in the sectors like Public Safety and Library (see Table 21). The weaknesses rating for the Public Safety Sector is particularly high with 6 (35%) of the 17 votes indicated weakness and other 65% votes were divided for strengths, opportunities and challenges.

5. **Economic development in the area suffers where there is a lack of broadband** – Even though the region shows higher percentage of businesses using internet for all the application (see Table 15) than the state average, the many businesses still feel they do not have the broadband speed they want that is affordable. In many cases, they do not have speed enough to satisfy their patrons/ customers especially the Tourism Sector businesses. Again, on the residential side also the region falls below state average (see Table 4) on 9 of the 18 internet for applications and one that stand out is use of internet to visit government web-sites (9% lower than state average). However, compared to the national average, residents in this region, lower percentage of residents use internet for applications like watching and playing videos, contributing to web-sites and blogs and online buying are lower.
6. **There is no or limited broadband connectivity to a number of remote areas, remote sites within the region** – Coverage of broadband in the region is not uniform, McDonald County in particular. The rural non rural digital divide in broadband adoption in the region is higher (30% difference) in the region than at the state level (19% difference, see Table 4). Rural Missouri has average broadband adoption rate of 63% compared to just 51% in the Lake of Ozark region.

## Key Opportunities in the Harry S Truman 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 Harry S Truman region. Some of the key opportunities noted during the SWOC analysis include the following:

1. **A high value is placed on internet access and broadband within the region**–Providing more public access, as well as working to serve these households, will act to increase adoption at home, application utilization and the overall value of broadband and the internet. 90% own a computer and 13% do not have internet but as indicated earlier 64% of the residents without internet seek and use it elsewhere. Build on the base of residents that value internet access but don't have access to broadband currently.

2. **Those without broadband want it and those that have internet want more-**The majority of the residents with dial-up connections want higher speed. Those businesses that report not having broadband would take it if it was available. Residential users overwhelmingly (67%) indicate that speed to be important choice when they look for broadband service. Satisfaction with speed of connection also contributes to overall high satisfaction levels. Additionally, 100% of businesses with internet use it for day-to-day operations (like e-mail), and most of the same respondents indicate that it would be beneficial to their businesses if the broadband climate were enhanced in their area. For those that have broadband, it is evident that higher capacity systems and connections would increase their satisfaction levels.

3. **Certain sectors were seen as providing significant opportunities for broadband in the Harry S Truman region as a whole** - RTPT members voted sectors like Healthcare, K-12 Education, and Business and Professional Services as the sectors with most opportunities. Provided affordable broadband options are available to businesses in the regions, as indicated by the RTPT member votes this region would be exploit the opportunities in education and healthcare sectors where broadband is critical in day to day operation as most of the systems are internet based. Given the fact that this region has location based tourism sector growth potential,

broadband enhances such opportunities and allows better provision of hospitality services. It will be important to take advantage of these opportunities as Strategic Directions and Initiatives are crafted to advance and enhance broadband in the region.

4. **Broadband means growth in all sectors** – All sectors including residential, business, institutional, organizational and others indicated that their growth, their ability to provide services and their positive impact on the region all would be enhanced by growth of broadband, based on the increasing use of broadband and internet-based services within their sectors.

## Key Challenges in the Harry S Truman 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 region. Few key challenges are listed below.

1. **Cost/Affordability is a significant inhibitor across the board to expansion in broadband availability and adoption** – For those households without internet access; cost was the number one reason for non-adoption followed by lack of computer at home. Privacy/ security concern related to computer and internet use and unavailability of high-speed internet, computer and internet related knowledge and skills were other reasons (see residential survey mark-up). Also, when asked the reason for choosing current internet service over other providers, 18% indicated it was the lack of choice (only available service), this suggest some challenge going forward for residents and businesses unless more providers are motivated to provide service in the area. Similarly, overwhelming percentage of businesses in the region indicated that they either did not have suitable broadband option (19%) or had only one provider (44%) in their area.

2. **Technology/Computer/Broadband literacy is a significant need** – Digital literacy related to computer and internet use/ installation and choices available combined cover considerable percentage of respondent who do not have internet access. Digital literacy possesses a real challenge for the reason to gear up in broadband adoption and use. The organizational respondents such as Local Government reported that they do not have right hardware and software and also lacked technical skills on broadband related applications. Libraries also report that they spend a significant amount of time training those that come to the libraries for public access, but don't understand how to utilize the various applications. Impacts of libraries are considerable in providing only access to some of the residents and also in digital literacy but libraries would face significant financial challenges unless MOREnet is around.

3. **The digital divide in computer, internet (including broadband)** - The divide within the region and region as compared to the state average possesses considerable challenge for the residents and the business community to compete in this digital age. On the other hand, thinking from the providers perspective providing broadband for those who do not currently have service available, the cost to provide broadband service to them, in many cases across the region, is beyond a reasonable return on investment. This entire means is that finding cost effective strategies for increasing computer access, internet access and broadband access will be critical to the success of broadband availability and adoption enhancing efforts within the region. The digital divide in terms of income of the residents of the region is another challenge. As indicated in Table 10, the lower income households lag significantly in adoption of internet and for that matter broadband.

4. **Key sectors are seen as facing challenges within the region that impact their ability to provide services, including providing broadband services to others** – The RTPT members

noted that some of the sectors like K-12 Education, Higher Education and Healthcare and Energy sectors facing significant challenges (also see Table 21).

**5. A significant percentage of households do not value computers or broadband** – The number one reason for not owning a computer is '*don't want/need one*' in the regions residential community. Additionally, 22% of residents feel that broadband access is either somewhat or not at all important. This shows a significant problem with a low value placed on broadband communications and internet access by many in the community. Even with all the evidence supporting the high value that should be placed, educating residents to the overall competitive value of internet access and broadband within the region will present a significant challenge to those that would advance and enhance the broadband climate in the region.

**6. Competition is desired in areas that have experienced difficulty supporting single providers** – Businesses noted their perception that there is a significant lack of a competitive broadband climate in the region; yet, one is desired. Businesses perceive that service would be more affordable and better speed options would be available with competition. Residents also say that cost and speed are the two major determinants of the choices that they make related to broadband. Yet the provider community indicates that some areas won't even support one provider with a reasonable return on investment and other areas cannot support more than one based on the available market. In order to create uniform broadband opportunities across the state, it will be necessary to advance the competitive climate within all regions of the state as well.

Similar to the above related to opportunities, these key challenges described above create concern related to every *MoBroadbandNow* goal. This heightens the need to define Strategic Directions and Initiatives that will meet these challenges.