SEUALG Southeastern Utah Association of Local Governments

SEUEDD Southeastern Utah Economic Development District

Providing Services in Carbon, Emery, Grand, and San Juan Counties

Southeastern Utah Broadband Report

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Executive Summary

Mission

The mission of the Southeastern Utah Broadband Planning Council (SEBPC) is to bring about the awareness of broadband services and current infrastructure while encouraging local businesses, residences and public officials to work together in bringing broadband into their local area. This plan is intended to promote and strengthen networking through the formation of partnerships between public and private entities with their broadband providers. The advancement of economic development in the rural areas can be realized by increasing public awareness, documenting resources and identifying activities to achieve deployment and adoption of broadband.

Planning Process

This report represents the initial outreach process where vital regional participants were recognized in identifying key issues and developing measurable milestones. Beginning with the initial workshop presentation on Broadband 101 and continuing with regional discussions via electronic mail, comprehensive one-on-one discussions, group meetings and conference calls.

Regional Overview

The Southeastern Utah region incorporates the counties of Carbon, Emery, Grand and San Juan. The region is known as Castle Country and is part of the Colorado Plateau. The land is spacious with high desert plateaus and extreme elevation changes. This part of the plan offers the current demographics of the district. (PDM, 2013)

Maps

A number of maps have been created to provide a variety of facts and needed information when planning for economic and community development. Several maps are essential to understanding the geographical and physiographical terrain that can cause challenges for broadband infrastructure.

Statistics

The statistical information will provide pertinent information on broadband adoption and needs in rural areas. This section provides planners with an overview of county population, average age and population distribution. The information is essential for prospecting the area for economic development, recreational and living resources.

This section provides the local survey results from the needs assessment posted late fall of 2013. The main respondents for the survey were residential consumers or non-adopters of broadband. However, through the planning modality, it was clear that commercial and business entities needed to be involved.

Broadband Planning Council Regional Findings

The SEBPC provided local input to the Strengths, Weaknesses, Opportunities and Challenges (SWOC) they face with broadband deployment and adoption. As this plan was being written, significant and ongoing discussions in this group and parallel groups were tackling the issue of broadband in our most rural areas.

Conclusion

The ability to network and to develop partnerships with local broadband providers, business groups and public entities creates a synergy in the rural areas. This helps engage entities to work together, provide community awareness of products and accessibility to products. Products can be sold online, businesses can be marketed and the Internet can be a powerful tool to communicate with old friends and family. It creates the flow of information through education, employment and business marketing. Ultimately, the development of broadband infrastructure and adoption enhances the quality of life!

Through a joint effort between the Governor's Office of Economic Development (GOED), the Public Service Commission (PSC) and the Department of Technology Services' Automated Geographic Reference Center (AGRC), this project to acquire input from local rural areas has succeeded in opening discussion among consumers and providers.

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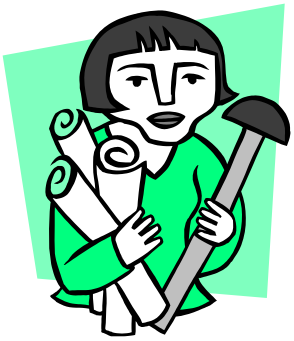
Introduction

This Regional Broadband Plan is part of a statewide effort called the Utah Broadband Project. The Utah Broadband Project is a joint effort between the Utah Governor's Office of Economic Development (GOED), the Public Service Commission (PSC) and the Department of Technology Services' Automated Geographic Reference Center (AGRC) to develop a statewide map of available broadband services and a plan to increase broadband deployment and adoption in the State of Utah. Similar programs have been undertaken in all 50 states through the State Broadband Initiative (SBI) program, which is being administered by the National Telecommunications and Information Administration (NTIA) and funded through the American Recovery and Reinvestment Act of 2009.

In 2013, the Utah Broadband Project partnered with each of Utah's seven Associations of Governments (AOG) to form regional broadband planning councils with the goal of assessing broadband availability and needs on a local level. These teams were tasked with identifying regional issues, priorities and goals related to broadband deployment and adoption, and creating community awareness about broadband-related issues.

This Regional Broadband Plan was compiled based on feedback and discussions held during meetings with local communities and the Regional Broadband Planning Council. The plan focuses on broadband issues and needs for the Southeastern Association of Local Governments (SEUALG) districts. The district includes Carbon, Emery, Grand and San Juan Counties.

This Regional Broadband Plan provides guidance for the advancement of broadband services and infrastructure, and will help to enhance broadband usage and demand in the region. The plan also provides a framework to advise the State of Utah, local government officials, broadband providers and other stakeholders about broadband-related topics and issues.



Planning

The preparation for this plan was acknowledged by the SEUALG and appointed staff member, Amy L. Peters. Participation from individuals associated with the following agencies were essential for the added value and comprehension they brought to table discussions. Entities whose members had direct input on completing this plan are as follows: SEUALG, Emery Telcom, Navajo Nation IT, Mexican Water Chapter, Utah State University Extension Office in Carbon County, Bluff Service District Business Group, La-Sal Library/Recreation Business Center, River Canyon Wireless, Ute Mountain Ute Tribe of White Messa, San Juan County Economic Development Staff, Monticello City and Blanding City administrative staff, Carbon County School District IT Department, Moab City Economic Development, Northern Regional Business Develoment Office in Montezuma Creek, Castle Valley Town, Frontier Communications, Emery County GIS/IT, Utah Navajo Royalties Holding Fund, Utah Education Network, Navajo Transit System and Moab Regional Hospital IT Department.

A. Process Overview:

1. Creating/submitting a Plan of Action to GOED
2. Establish a Broadband Planning Council (BPC) from local sectors
3. Conduct initial workshops in each county
4. Conduct group and individual SEBPC meetings
5. Create/conduct a Regional Needs Assessment
6. Regular discussions with GOED and lead Association of Governments coordinator and submit quarterly reports
7. Participate at the 2013 Broadband Tech Summit
8. Submit a draft of SEBPC Plan to entail local findings
9. Present a final plan and presentation to the Utah Broadband Advisory Council

B. Participants:

The SEBPC participants are lised in Table 1. These council members contributed their time and effort through particpating in the initial workshop, 2013 Broadband Tech Summit, local discussion meetings, conference calls and electronic correspondence.

Table 1: Southeast Broadband Planning Council

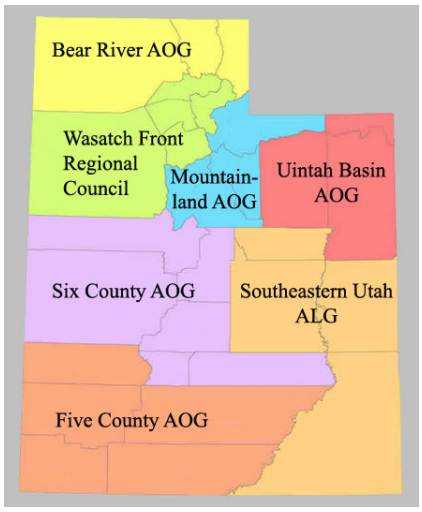
Participant	Affiliation
Bryan J. Anderson	**Carbon County**
Jared Anderson	**Emery Telcom**
Shane Baggs	**BEH Communications**
Lee Bigwater	**Navajo Transit System**
Melinda Blackhorse	**Utah Navajo Royalties Holding Fund**
Gwen Cantsee	**UTE Mountain Ute Tribe**
Jason Chappell	**River Canyon Wireless**
Oliver Crane	**Monticello City**
Ken Davey	**Moab City**
Jennifer Davila	**La Posada Pintada**
Tony Dayish	**Utah Navajo Royalties Holding Fund**
Karry Deeter	**La Sal Library**
Charles Delorme	**San Juan County Economic Development**
Lavern Dennison	**Mexican Water Chapter**
Josh Ewing	**Bluff Business Group**
Michael Foster	**Moab Regional Hospital**
Jeff Guymon	**Emery County—IT**
Pam Hanson	**San Juan County Economic Development**
Bret Hosler	**Blanding City**
Brock Johanson	**Emery Telcom**
Kraig Kaizumi	**Frontier Communications**
Scott MacKnight	**Carbon County School District**
Skip Meier	**Bluff Business Group**
Brett Mills	**Emery County Sheriff's Office**
Clinton Olsen	**Emery County—IT**
David Olsen	**Moab City**
Ron Patterson	**USU-Eastern Extension**
Amy Peters	**Southeastern Utah Association of Local Governments**
Serena Posey	**UTE Mountain Ute Tribe**
J. Dan Raisor	**UTE Mountain Ute Tribe**
Jeff Rienhart	**Moab City**
Griselda Rogers	**UTE Mountain Ute Tribe**
Dennis Sampson	**Utah Educational Network**
Michael Shattuck	**Mexican Water Chapter**
Harold Skow	**Navajo Nation IT**
Dorothy Smith	**Northern RBDO**
Lynn Stevens	**Utah Navajo Royalties Holding Fund**

C. Outreach Methods and Meetings

SEUALG has lead and assisted in various plans throughout the district; therefore, it was reasonable to use existing contact lists to request participation. Outreach methods involved electronic invitations to existing planning parties throughout the region. In addition, letters were sent to all libraries in the district in an effort to notify them and gain their perspectives.

The effort to the gain participants from specific community sectors (i.e. public safety, education etc.) in the form of an initial letter sent via electronic message was provided to all anchor institutions, public offices and local broadband providers to encourage their participation on the SEBPC. Follow up was made through individual electronic messages or in-person discussions. During the year, other people were identified for sectors and were asked to participate at the meetings.

Refer to Appendix B, Planning Materials, for letters, dates of meetings and participants.

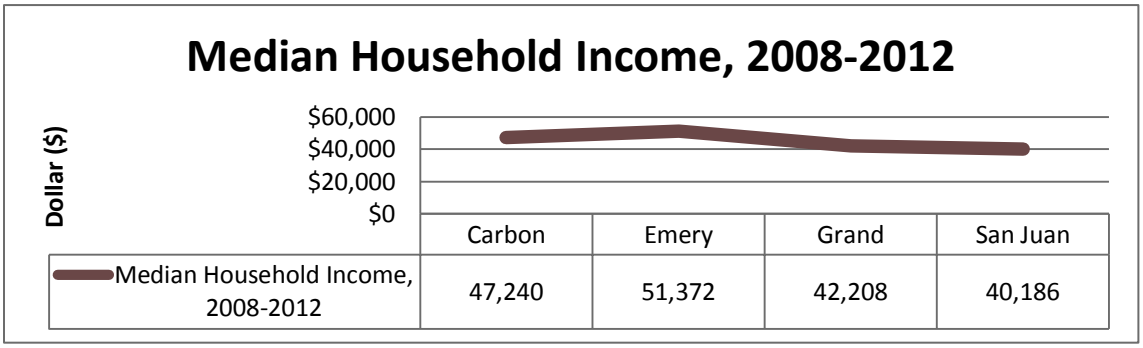


Regional Overview

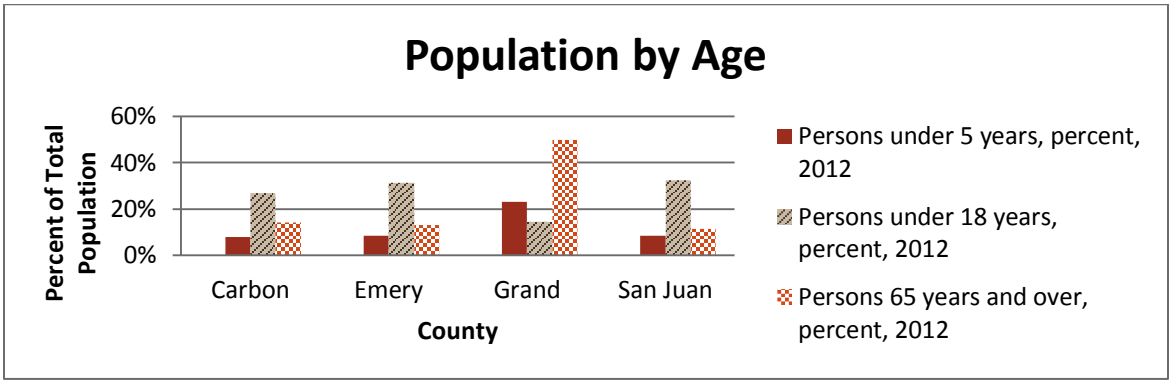
The southeastern districts of Utah are vast with wide open areas covering 17,432 square miles of forested land to high desert lands. The total population of the district being 56,350 averaging about 21 persons per square mile, or to be more precise, figures of 14.5, 2.5, 2.5 and 1.9 for Carbon, Emery, Grand and San Juan Counties, respectively. The following sections cover demographics by county through demonstrating various graphs of census data. This type of information affords planners and the general public an overview of this region. It can help determine cost per person, areas needing coverage and the probability of economic development in the district. (Census Bureau, 2014)

Demographics by County

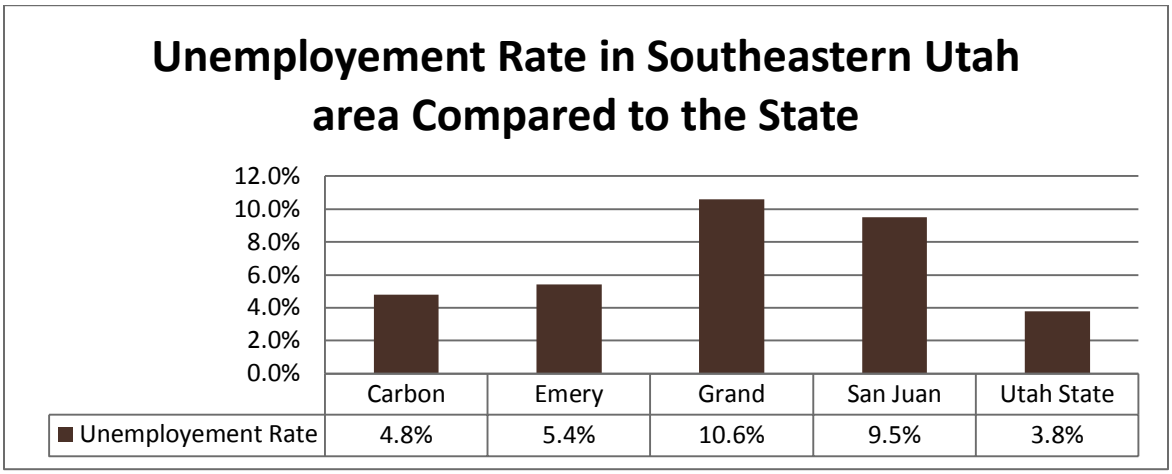
1. Median Income



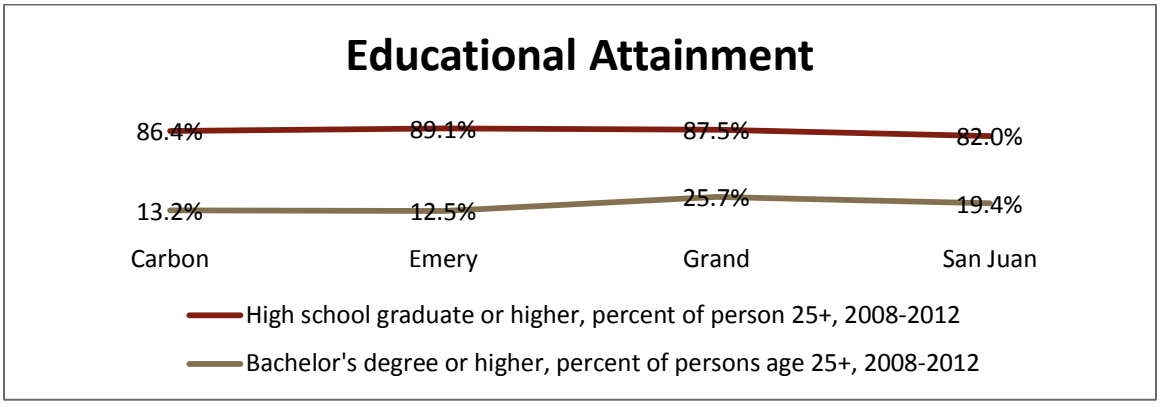
2. Average Citizens' Age



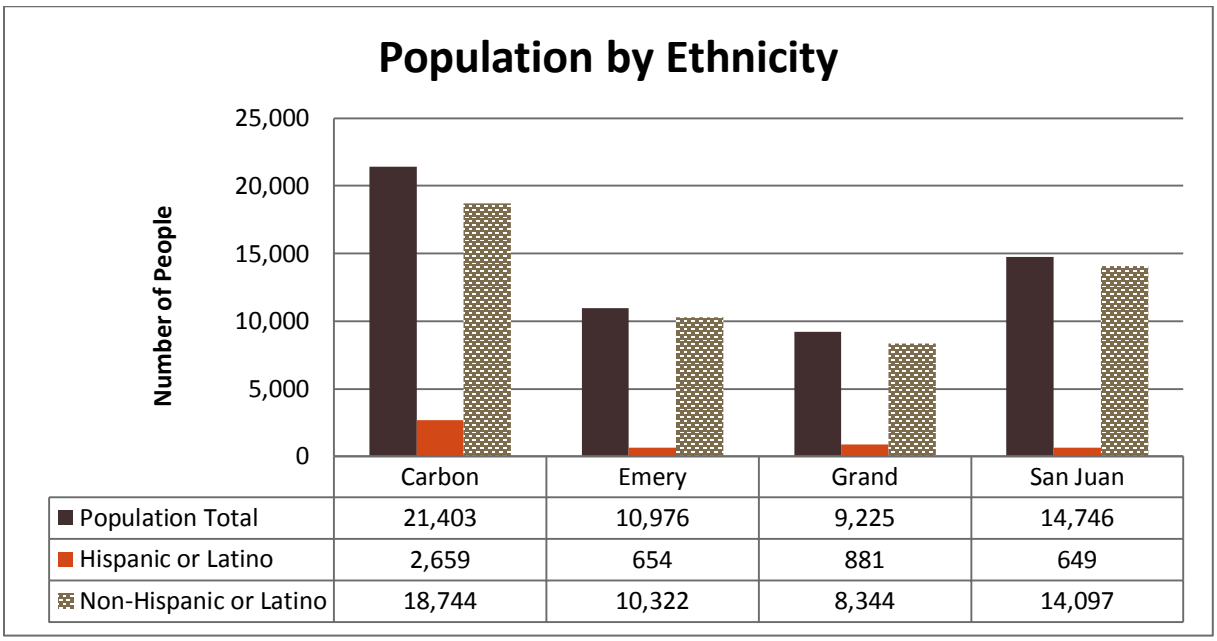
3. Unemployment Rate



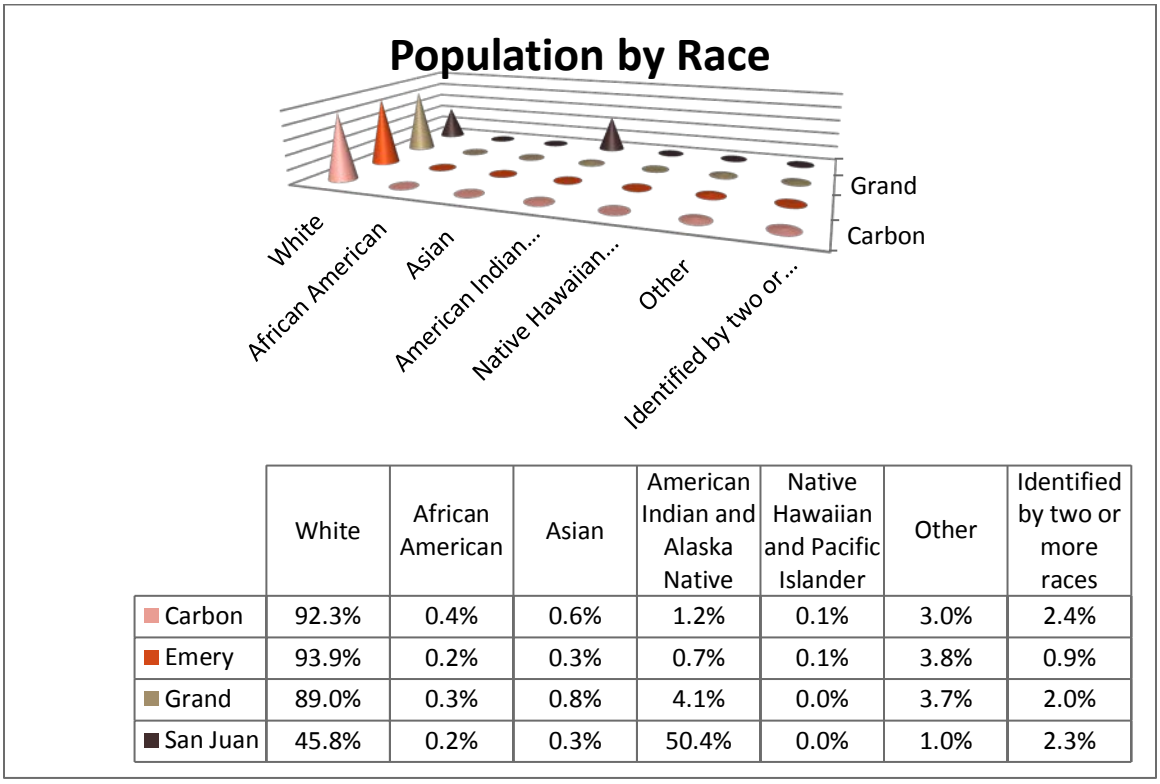
4. Educational Attainment



5. Race/Ethnicity



	Carbon	Emery	Grand	San Juan
Population Total	21,403	10,976	9,225	14,746
Hispanic or Latino	2,659	654	881	649
Non-Hispanic or Latino	18,744	10,322	8,344	14,097



	White	African American	Asian	American Indian and Alaska Native	Native Hawaiian and Pacific Islander	Other	Identified by two or more races
Carbon	92.3%	0.4%	0.6%	1.2%	0.1%	3.0%	2.4%
Emery	93.9%	0.2%	0.3%	0.7%	0.1%	3.8%	0.9%
Grand	89.0%	0.3%	0.8%	4.1%	0.0%	3.7%	2.0%
San Juan	45.8%	0.2%	0.3%	50.4%	0.0%	1.0%	2.3%

Maps

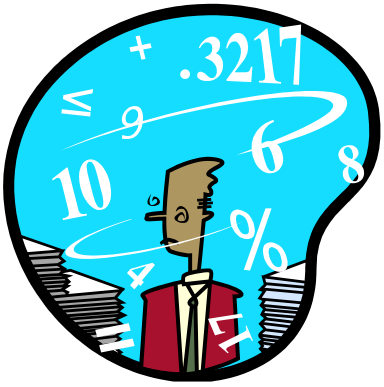
This section of maps will provide users a visual understanding so they may interpret the data most important to their local area. The council was asked which types of maps would be useful and maps were supplied by the Utah Broadband Project. Maps will show the relationships and trends associated with the region's geography, land ownership, population density, broadband coverage (wired and wireless), number of providers in the area and broadband advertised speed. Appendix A. MAPS will show the following southeastern area maps:

<u>Overview for Southeastern Region:</u>

- Land Ownership
- Population
- Terrain
- Transmission Lines

<u>Each County—Carbon, Emery, Grand and San Juan:</u>

- Wireless Download Speeds
- Fixed Download Speeds (results from a mobile drive test)
- Fixed Upload Speeds (results from a mobile drive test)
- Fixed Broadband Providers Speeds at
    - ≥ 3 Mbps
    - ≥ 10 Mbps
    - ≥ 25 Mbps



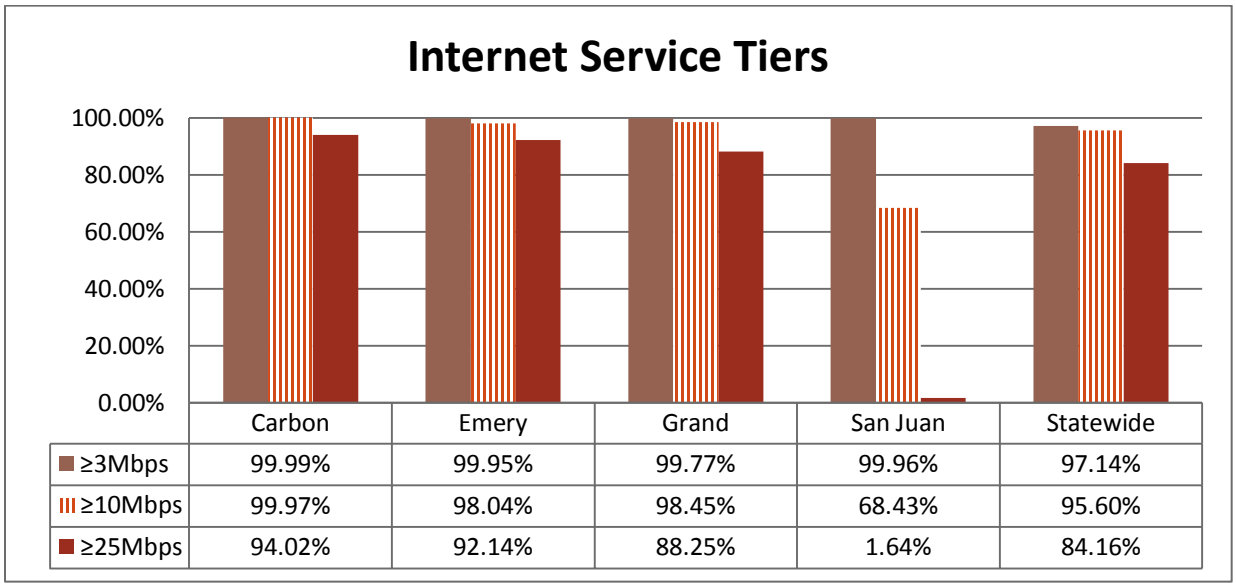
Statistics

Statistics of broadband adoption and use capability are discovered through the use of various surveys and data analysis.

A. Service Tiers by Number of Households

Internet service tiers for each county offers information from local broadband providers on the number of households that currently have Internet service. This service is measured by download speeds in megabytes per second (Mbps) and shown as a percentage of households receiving Internet services equal-to or greater-than of download speeds of 3 Mbps, 10 Mbps and 25 Mbps for each county.

Table 2: Download Internet Service Tiers for Each County (percent of households):

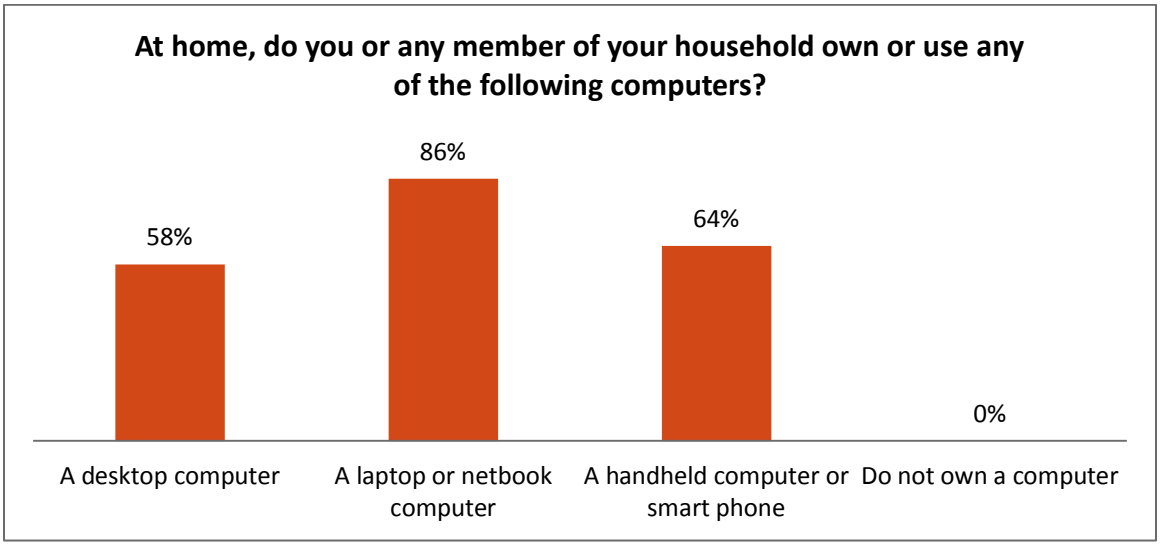


	Carbon	Emery	Grand	San Juan	Statewide
≥3Mbps	99.99%	99.95%	99.77%	99.96%	97.14%
≥10Mbps	99.97%	98.04%	98.45%	68.43%	95.60%
≥25Mbps	94.02%	92.14%	88.25%	1.64%	84.16%

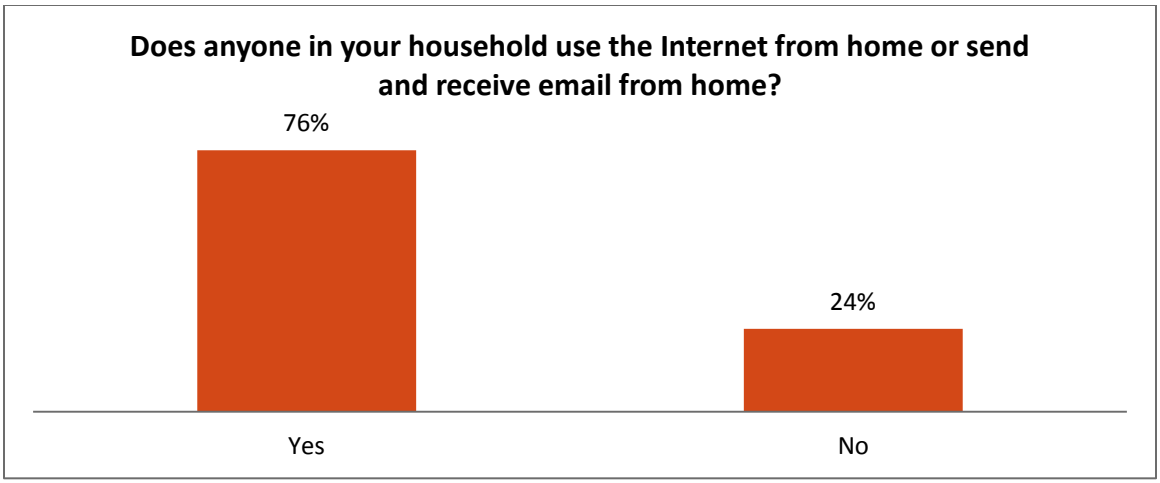
B. Local Survey Results

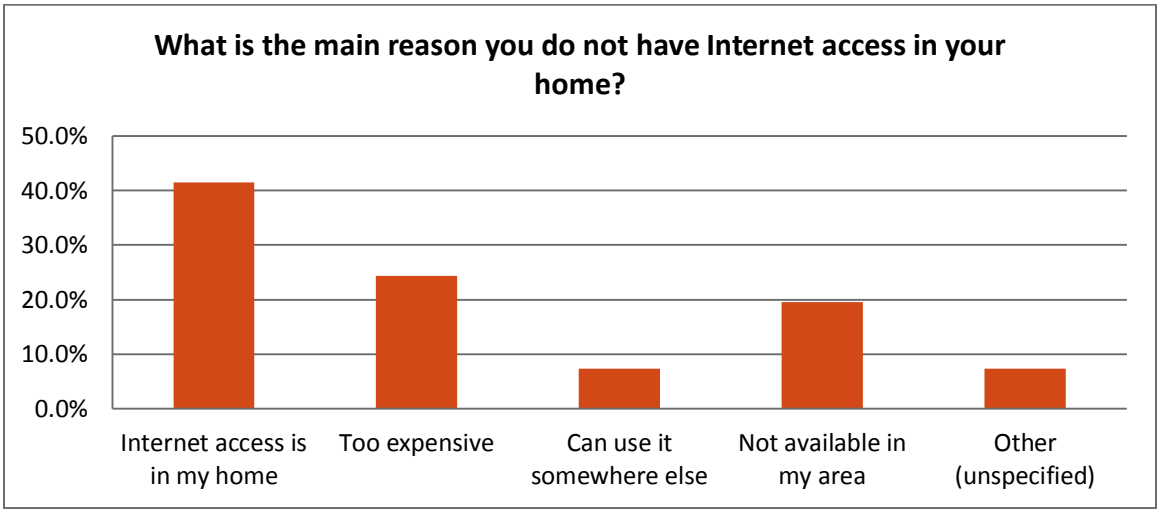
The local survey was developed through council members' input and also utilized questions from the Utah Regional Broadband Planning Councils Toolkit. The local needs assessment was conducted from November 20 through December 16 of 2013.

Through prior discussions with council members and other informed stakeholders in the region, the survey was made available to the public through many venues. These included electronic mail blasts to council members and SEUALG partners and affiliates, advertisements in Emery and Carbon county newspapers, county and city websites, utility bills in Blanding, the Ute Mountain Ute Tribe Community Center and many Navajo Nation community areas. Below are graphs depicting the survey results and each question is supplemented with a clarifying narrative. A copy of the Needs Assessment Survey is available in Appendix B.



The above question was requested in the beginning of the survey to establish if individuals have an electronic device, while the next question checks to see if the participant has access to broadband. Out of the responses, over 50% of those who participated in the survey have some type of device and have Internet access from their home.



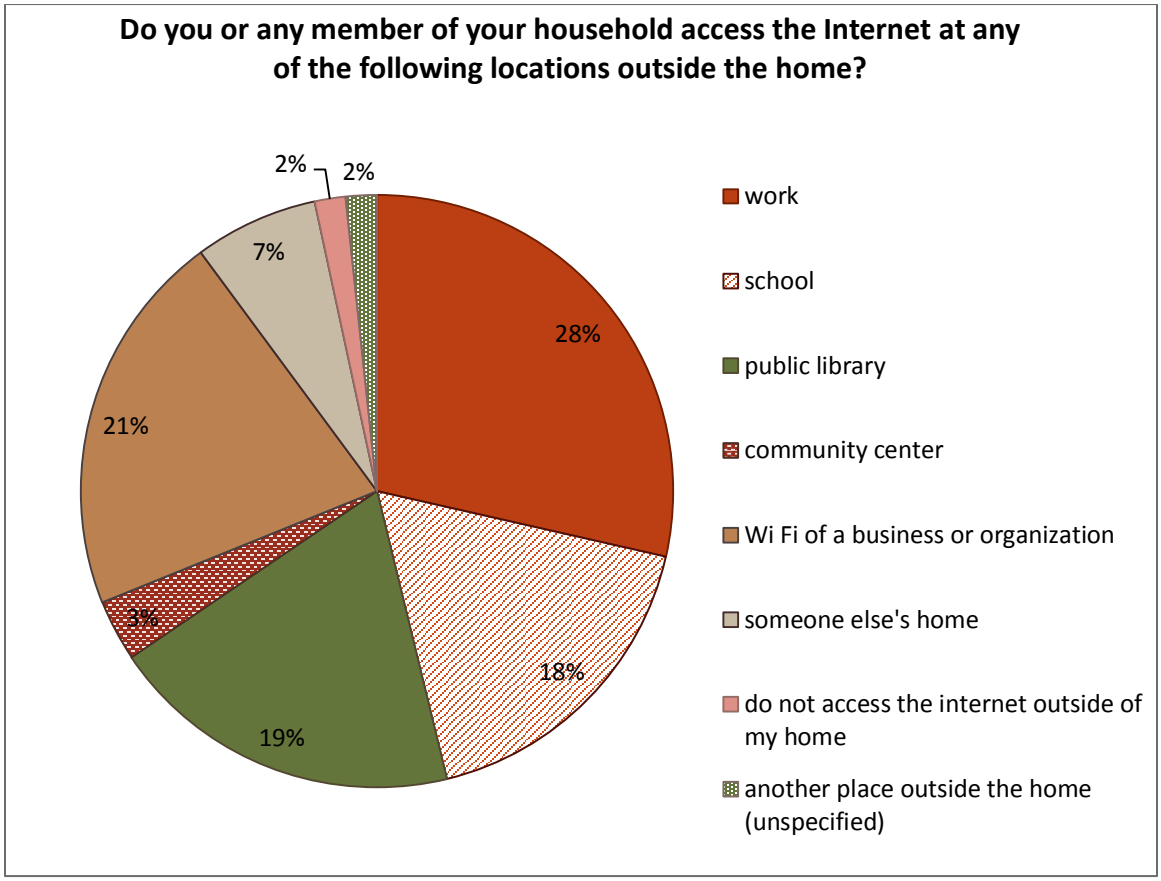


The question, "What is the main reason you do not have Internet access in your home?" revealed pertinent information to the area's underserved and unserved needs for broadband services. Approximately 20% of responders say that the Internet is not available in their homes, while 25% say that Internet services are too expensive. Therefore, over 50% of the responses on this survey question are currently being either underserved or unserved by broadband technology. The question results imply a significant percentage of residents do not have an adequate way to pay for the service or there is a lack of service in their local area. Therefore, the issue should have further clarification in order to provide a solution.

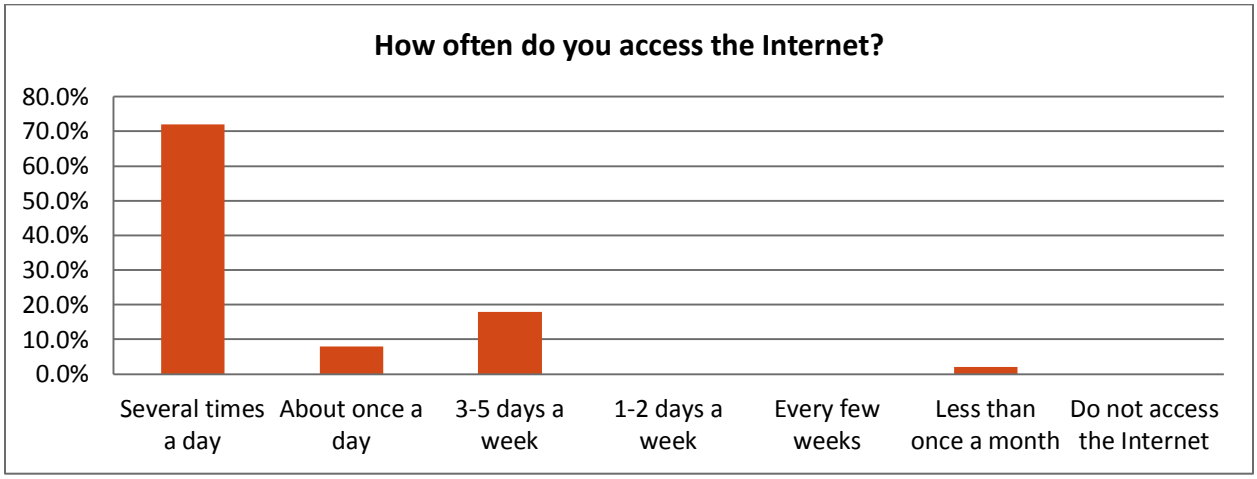
The following question gains a better understanding of where residential patrons use the Internet. Through the question responses, a responder could reply to as many sites as listed in the box below. This box also shows the percentage of users. The circle graph provides us with an actual percentage (base of 100) for a patron's Internet use outside the home.

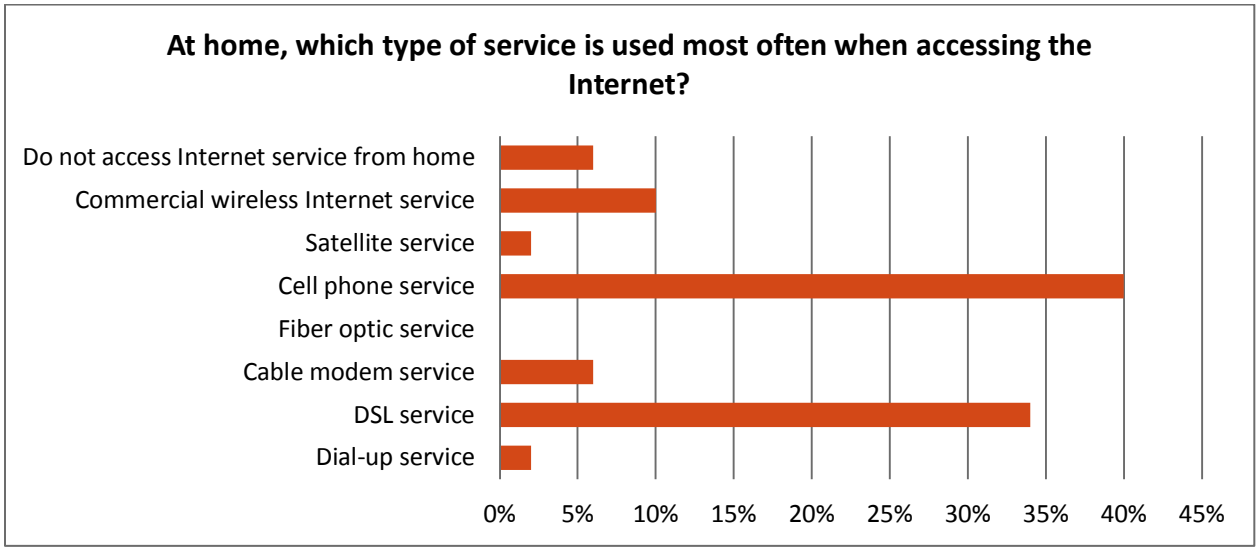
Do you or any member of your household access the Internet at any of the following locations outside the home?

work	70.8%
school	43.8%
public library	47.9%
community center	8.3%
Wi-Fi of a business or organization	52.1%
someone else's home	16.7%
do not access the Internet outside of my home	4.2%
another place outside the home (unspecified)	4.2%

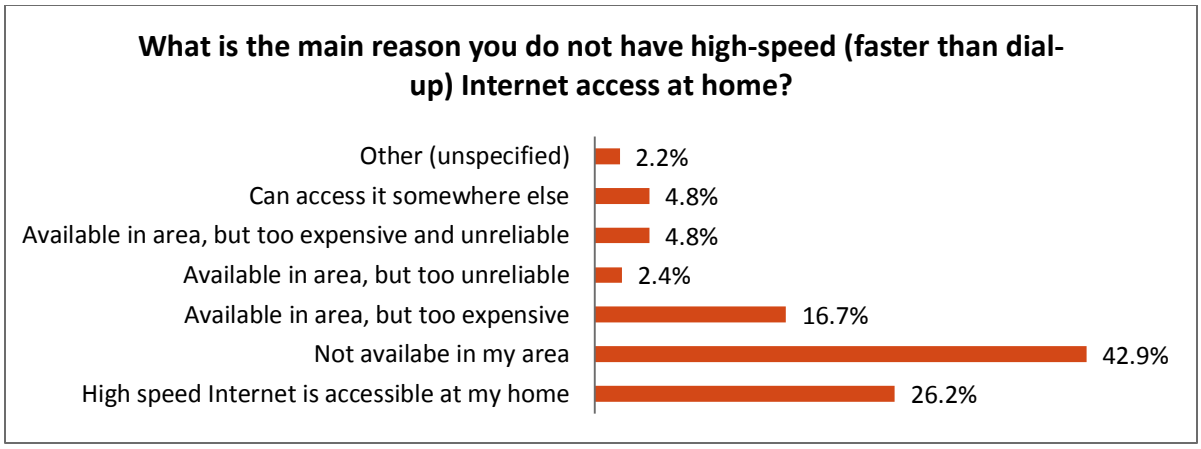


Usage of the Internet from various venues is high in the Southeastern area; of those asked, over 70% utilize the Internet on a daily basis, while others access it a few times a week. This acknowledges people are using the Internet for a variety reasons including work, school, study, health, buying/selling or staying in touch with others.

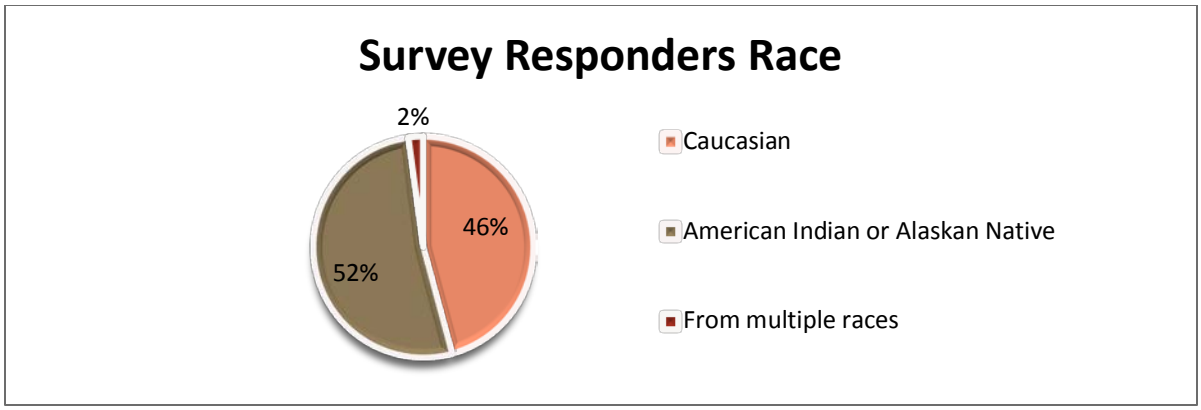


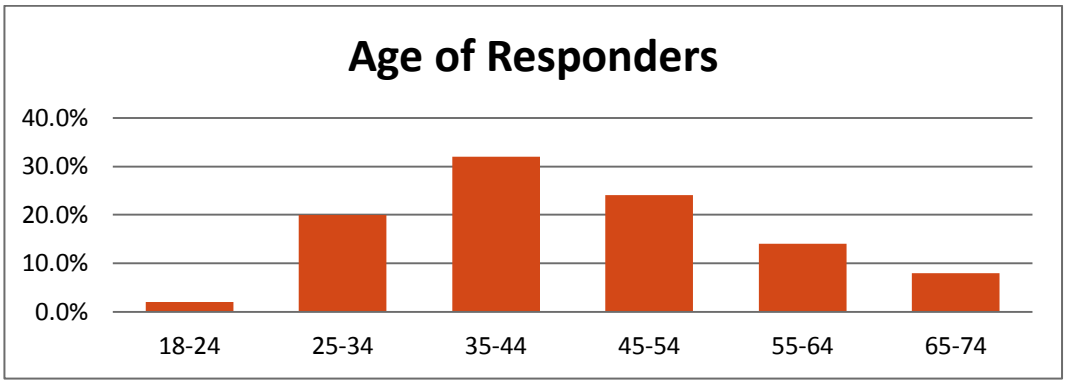


Internet access from home and the availability of Internet access in the home are important to everyday lifestyles. The outcome of the above question states that cellular phone service is the main way of accessing the Internet at home while DSL comes in second. When asked, why patrons do not have faster than dial-up in their homes; over 40% response saying it was not available in their area. This may identify an unserved/underserved area; furthermore, this information should be investigated more thoroughly and an action plan to resolve the issue should be planned for in the future.



The next two questions were to review the responders' race and age. These questions were voluntary with 96% of the survey responders answering the question on race and 100% on age. The results of having almost 50% of Caucasian and 52% American Indian or Alaskan Natives also aligns with the other questions in the survey. The zip codes collected gave a correlation between race and responder response for broadband activity where it weighed heavily in the San Juan County areas.





C. Results of State Residential Survey of Non-adopters (See Appendix E for a full report)

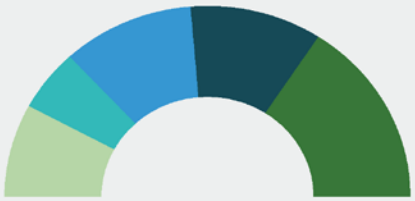
UTAH BROADBAND NONADOPTERS

THE STATE OF UTAH
BROADBAND PROJECT
BROADBAND.UTAH.GOV

SOUTHEASTERN ASSOCIATION OF LOCAL GOVERNMENTS REGION

The Southeastern Utah Association of Local Governments (SEUALG) region includes Carbon, Emery, Grand, and San Juan Counties, and is fairly isolated when compared to the rest of the state. The region relies on extractive and agricultural industries and is home to a substantial Native American population, with an estimated population of 56,350.

NONADOPTERS OF BROADBAND IN THE SOUTHEASTERN REGION ACCESS THE INTERNET INFREQUENTLY



Several Times Each Day (16%) | Once a Day (10%)
3-5 Days a Week (21%) | 1-2 Days a Week (0%)
Every Few Weeks (21%) | Do Not Access (32%)

The average age of respondents in the region is only 49.5, compared to the state average of 56.2. Households in the region make only $31,875 annually, compared to the state average of $51,347.

KNOWLEDGE AND EXPERTISE

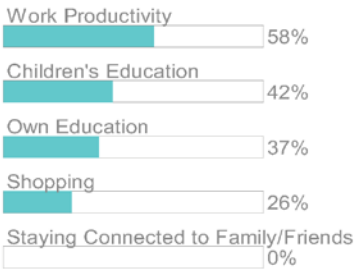
Have you participated in a class, seminar or other program to improve your computer or Internet skills?

No (74%) | Yes (26%)

A lack of knowledge and expertise is playing a key role in nonadoption. Over 63 percent of respondents ranked their computer skills as average or below average. When asked what would make them more likely to have high-speed Internet access in their homes, 63.1 percent answered training on computer and Internet use.

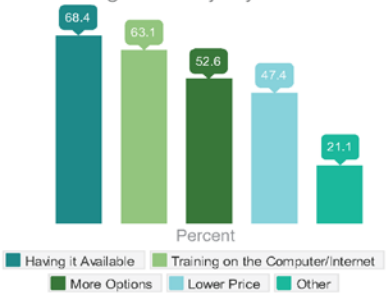
INTEREST IN HIGH-SPEED INTERNET

Over 63 percent of the region's respondents are interested in having a faster high-speed connection in their homes in the future, higher than the statewide rate. Respondents saw many benefits to obtaining in-home broadband access.

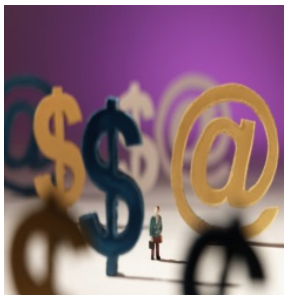


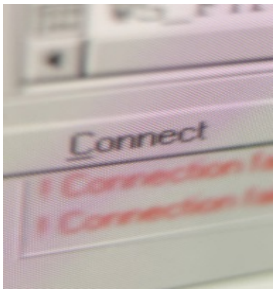
AVAILABILITY

When asked how many service providers are available in their area, 57.9 percent of respondents in the SEUALG region did not know. Actual broadband availability in the region is high, although San Juan County lags behind in terms of providing high-speed coverage to a majority of homes.



What would make you more likely to have high-speed Internet access in your home?





Southeastern Broadband Planning Council
Regional Findings

A. SWOC Overview

Strengths, Weaknesses, Opportunities, and Challenges (SWOC) is an analysis tool utilized in strategic planning. This tool was presented in the Utah Regional Broadband Planning Councils Toolkit as a way to seek information from council members. It is also a notable planning strategy in the business world and was formally known as Strengths, Weaknesses, Opportunities and Threats (SWOT). We no longer think there are “Threats” only “Challenges” to overcome.

During the initial broadband workshop with council members, the SWOC tool gave an opportunity to discuss broadband resources that are highly valued (Strengths), what reasons compromise broadband adoption (Weaknesses), what situations could positively impact broadband development (Opportunities), and what circumstances may negatively impact broadband availability and acceptance (Challenges).

The following sectors were discussed by members: Telecommunications Infrastructure, Local Governments, Public Computing Centers/Wi-Fi Access, Education, Libraries, Economic Development/Business Needs, Healthcare and Rural Broadband Access. In Table 2: SWOC Overview, the sectors are further broken out for each county. The table provides an overview of each sector of interest, county area, and the SWOC input from the SEBPC.

Table 3: SWOC Overview

	Priority Area	Strengths	Weaknesses	Opportunities	Challenges
Telecommunications Infrastructure	Grand County	Several providers, reliable service.	Options of services dwindle by distance.	Consumers are not receiving advertised services available in the local area, generic advertisements mailings are received, many services offered by the provider(s) are not available in the local area.	Consumers are interested in provider service; but, service fees need to be reasonable for the local area.
	Carbon County	Available high-speed Internet service, Carbon & Emery Counties plus Moab City area for businesses & residences have higher access to rates and availability of service compared to other cities in the Utah. Costs of mobile services are decreasing. Changes that are coming are aggressive and areas can receive 40 Mbps. Providers (at this time) are not charging for use like mobile companies.	Providers: Educating the consumer on usage, how to advise customers on what they need to buy and when to upgrade their service.	Questions that may create opportunity…Is there a mandate on usage to reach consumers? Has pricing decreased with the economic downturn? Will people give up other things before they give up their Internet? One to one devices for each student in education will bring business to the carrier by lease, ownership, insurance and more. Note: There has been a 6% decline in landlines.	Marketing campaigns in line with technology, population density, know "how to educate" potential/current consumers.

Healthcare	Grand County	The Moab Regional Hospital offers free Wi-Fi, extended medical service.	Price of services is high and local match on grants.	Educational classes are available for physicians and staff.	Local match on future grants is 40%; therefore, sustainability on service is at risk.
Public Computing Centers/Wi-Fi Access	Grand County	The majority of businesses offer free Wi-Fi.	Wi-Fi accessibility is not available in all communities.	Hospital managers are meeting one-on-one with communication companies/providers.	Loading down services.
	San Juan County	Access available to public and tourists in the community. Wi-Fi access available locally in Bluff includes library, Twin Rocks Café, most hotels and Ridge Coffee Shop.	No land/structure to expand services, limited too few users.	Establishing secure and more Internet services.	There are large distances between communities, costing millions of dollars to install fiber between communities, keeping local residence and business owners in the area and keeping tourist/business information running and accessible.

Education	Grand County	Utah Educational Network (UEN) availability, higher learning available, and worldwide access	Lack of available high-speed Internet in home for continued educational access by students.		Reasonable cost
	Carbon County	[CC School District]: Technology expansion is occurring, children can gain access, providing 1 Gb speeds, all internal fiber and infrastructure is strengthened. Partnership with local provider (Emery Telcom). There is one voice over communications utilized, Districts of Carbon, Grand, Emery and San Juan plan together for forward looking committees, USU teaches classes remotely, have access with Universal Dial-Up-Service, robots/well managed network with filtering content and monitoring of content and administration is supportive of technology use in Carbon County.	Professional development for imparting technology usage into lesson planning and classroom use.	To become educated on technology use, underutilized technology by teachers can take education to a new level, huge research opportunity. USU: able to reach a wider audience and utilization of consumer videos will educate themselves more and become more efficient and effective.	USU: Provides wireless network to handle local use, funding is at the mercy of legislature that is in control at the time, sustainability and generational diversity (agriculture outreach must be diverse through making up letters for those who do not use the Internet and making videos to reach those learners that will use it). Finding effective ways to bring technology into the classroom, software changes occur before teachers become familiar with it and changes in time create a technology-teacher gap.

Libraries	Grand County	Free Internet usage and computers are available.	Internet access becomes bogged down with many users and cost of hardware maintenance.	Grant access.	Reasonable and sustainable costs on equipment and services.
Transportation	San Juan County	The partnership with state corridor has opportunity to lay the fiber, Navajo Transit System did run through Blanding, Fiber runs through Navajo Nation but unsure as to where. Partnership with Utah Department of Transportation (UDOT).	No highway corridor development and population is sparse. Fee charged by UDOT. Admitting cost is more in rural areas and currently fees are not distributed.	Partnership with Navajo Nations' Department of Transportation and working on planning wireless connection to customers. Low population and tourist volume.	Bureaucracy. Rights-of-way, federal grants and benefits to rural area by placing main fiber artery close by.

Economic Development/Business Needs	Grand County	Current upgrades throughout the city include recreational center, hospital, school facilities. Regional Hospital has employment recruiting.	Higher cost of services for the same service (rural vs. urban).	Community opportunities to bring in higher tech businesses.	Limited choices for Internet services in La Sal area.
	San Juan County	Partnership is stronger with GOED office, BEAR program has a large inventory of entrepreneurs, commissioner's strong relationships with Governor and legislature, good knowledge and strong relationship with Navajo commissioner, and connections generate good funds (hotel tax) through tourism.	Lack of sustainable funding, office budget is 25% of Price City, distance between communities, low to average wage (poverty), low employment (choices) and large distance between residences and between businesses.	Tribal partnership, using a portion of Payment in Lieu of Taxes, private endowments, Co-op with pledges could encourage other partners, portion of transit room tax could go towards development, and Lands Bill could reallocate federal lands where funds should go to area it impacts.	Large distances between fiber runs, cost of $5.5 million for connection between Moab to Blanding (completed 2012), and how to get the final connection for smaller communities.

	San Juan County **(business needs)**	Creative people and motivation by dollars.	Small demand for services, financial challenges, logistics of installation and dealing with private industry.	Better opportunities for healthcare, quality of life, entrepreneurship and education; making money, banding together, employment opportunities increase, more broadband service will give connection to the outside world through advertisement, booking hotel rooms and overall quality of life.	Sustainable funding, logistic of geography, physical connection or material and consumers utilizing educational opportunities.
Local Governments	San Juan County	Awareness of current services in the area (Blanding) and understanding of utilities and the process of incorporating services.	Small population, private sector, and low economic incentives.	Large distances between communities and costing millions of dollars to go from one community to the next.	To encourage communities to band together on broadband initiatives; legislators to work on broadband projects due to their stature at the governments/legislative office; Look at Navajo Nation's process and experience; local government could qualify together with business development on broadband (saving resource initiative).

B. Forum Responses:

Questions were addressed through the course of electronic correspondence, meetings and one-on-one discussions with southeastern stakeholders and the SEBPC. There is an added value in finding out the perspective of stakeholders and council members; one will find a theme that tells broadband access is highly important in our lives. The direct quotes or remarks obtained during these discussions are presented below.

Question 1

Thinking about the work that you have done over the last year, were there instances when your Internet/broadband service made all the difference in whether those projects were successful or not? Briefly describe an example. ..

Responses

"*I do work daily on the Internet; our slow lines often make this work frustrating if not impossible. The items that I have the most trouble with are working on editing and adjusting my website, working on social marketing and working with and updating my businesses reservation site. My work often includes uploading photos and short video clips, this often takes hours! It is very frustrating because many times during a session my programs will time out, causing me to start the whole process over. I often find myself doing these items during the middle of the night because that is when the Internet works the best."*— **Jennifer Davila, Owner/Operator La Posada Pintada**

"As an Internet Service Provider, we do things every day that fully rely on broadband Internet being present. We need to make sure networks are up and running, and when they are down, gets them fixed as fast as possible." — **Jason Chappell, IT Director, Royce's Electronics Inc.**

"With the cost of travel ever increasing, Internet video conferencing has helped with our local budget, but we have some struggles staying connected. I don't know if this is a broadband problem or a firewall problem."—**Ron Patterson, Utah State University Carbon County Extension**

Question 2

How do you use the Internet or other network series at your place of business or organization?

Responses

"Processing payments, administering networks, researching possible, planned, or useful network upgrades to equipment or software, customer support, etc." **–Jason Chappell, IT Director, Royce's Electronics Inc.**

*"The majority of the work I do is informational and communication--fact sheets and videos that will help my clientele learn what they need to know to be successful. For communication it is mostly emails, but we have also started using social media and Internet video conferencing as well."***—Ron Patterson, Utah State University Carbon County Extension**

Question 3

How important is broadband to your local community? In other words, if you were creating a list of priorities for your region, where would you rank addressing the problem of broadband capacity? (First, fifth, tenth---not on the list)?

Responses

"I know that southeastern Utah definitely needs broadband service, but other infrastructure developments that supplement the broadband capacity have to be established first. Therefore, I would classify this project at 3rd priority. Or maybe it's the other way." **–*Lee* Bigwater, Manager, Navajo Transit System**

"I rate it 1B. Only because we have ranked Utah Fast Track Grant Incentives as 1A. Right at the top of the list!" **– Charlie Delorme, Director of Economic Development for San Juan County.**

"…being that economic development and water are main priorities for drilling companies to come to [Monticello City], broadband is next in line. The city loses out too often when companies wanting to locate to Utah because the city's packages are disqualified on the mark of inefficiency of broadband and communication sources that are available." **–Greg Westfall, City Administrator, Monticello City**

"…Broadband is HIGH on the priority list! Noting that a call center located in Richfield was ten times more than if it were here in Blanding (reliable broadband was the issue). Better communication is created with reliable broadband, economic development is the key because the city does not have a major airport, train, or major highway around the city, and it has limitations where reliable broadband would/could bring jobs to the local area. With the hospital getting reliable broadband this has had a positive impact on the community. The city needs a level playing field for funding for rural areas to increase economic development in the area; could be created through use of reliable and redundant broadband. Noting that USU-Blanding received a UEN grant to help input connectivity to the college and was a substantial investment for the university as well." **–Jeremy Redd, City Administrator, and Brett Hosler, Assistant Administrator for Blanding City**

"We have limited use of the broadband in our fire service area. While we have good signals in Price City there are many dead spots in our overall service area. We would consider more fully utilizing broadband if some of the many "dead spots" were removed." **—Paul Bedont, Fire Chief, Price City Fire Department.**

C. Key Issues and Priorities

Key Issues and order of importance

The council was asked to rank the 12 key issues in order of importance. The perception of importance differs for each sector; therefore, three categories were established from the council as being: providers, local governments and tribal/other participants.

Ranking

Provider: 1, 6, 2, 5, and 10
Local Governments: 5, 1, 3, and 12
Tribal/other participants: 5, 2, and 12

Key Issues

1. Large distances (geographic gaps) between communities costs millions of dollars for infrastructure

2. Consumers are not receiving information on services available in the local area. If consumers do receive ads they are in the form of generic advertisements where many services by the provider are not available in that local area.
3. Difficulty with sustaining and attracting business in rural areas due to the inconsistent upload and download speeds; plus unreliable services may be due to issues such as satellite interference.
4. Rural population combined with high volume of tourism (tourists utilize and take for granted broadband accessibility).
5. Ability to provide a wireless network to handle mass use (such as connecting schools in buildings and libraries and hotels).
6. Funding is at the mercy of legislature that in control at the time and more rural representation is needed.
7. Funding ways to bring technology into the classroom while closing the teacher-technology gap with effective trainings.
8. Software updates/changes occur before teachers become familiar with utilizing it (teacher-technology gap).
9. Funding challenges from providers while dealing with geography, marketing campaigns to meet technology, physical connections, and ad material and population density.
10. Ability to educate potential/current customers on utilizing current/new technology and customer actual need of broadband. (How do you teach customers on what type and how much service they need?)
11. Utah Navajo Nation does not have an address for delivery, which is a public safety issue since the landline needs to have a physical address.
12. Redundancy of lines (to reduce the possibility of service interruption).

Measurable Milestones:

1. Telecommunications: To attract more broadband services providers may provide a higher level of service (competition) not only in the Grand County valley area, but for La Sal, Castle Valley and Spanish Valley at a reasonable price to consumers.
2. Carbon School District: Plans to place a device in each student's hands within 3-5 years with the wireless infrastructure to handle the input. (challenge is sustainability)
3. Partnership: To unite with businesses owners by forming a partnership with other businesses could expand our networking capabilities and enhance our community network structure.
4. The Navajo Nations' seven chapter houses will connect within two years through help from USU.
5. Fiber throughout corridors in Monticello City and San Juan County areas.
    a. Key buildings within six months
    b. Grant applications to be filled out in one year along with contact being made to UEN, UDOT for rights-of-way, and other sustainability grants for broadband projects.
    c. Within three to five years, introduce bids for the community to connect.

d. Within three to five years, business incentive programs.
e. Within three to five years, put into place a land circuit to continue building off from.
f. Within three to five years, make connections into White Mesa, La Sal and other out-lying areas.

D. Questions and Challenges

The following questions were posed by the council during meetings:

Questions

Blanding City:

- What happens to the old equipment when it is upgraded?
- The second hand equipment could be utilized somewhere else in the city.

Monticello City:

- How does a city get higher capacity Internet?
- What lines come through Monticello?
- Who owns the lines?
- Why/how are we connected or not?
- The city does not receive the same bill/invoice from the provider each month? Why…what changes? The provider's customer service adjusts invoices and credit; but why does the city need to call every month to request this?
- Provider does not call you back and it does not receive the same representative when they call.

San Juan County:

- What broadband is currently in Monticello and how to access it?
- Need consistent Internet services for the county and City of Monticello
- Without consistent/reliable broadband Internet services it is stifling credit card businesses/transactions
- Who currently owns the fiber on/under the road (highway)?
- If UEN funds an anchor institution how can the city/county put together a project to access the line?

Challenges

Utah Portion of the Navajo Nation

- Connectivity and reliability of broadband services; physical addresses on the reservation are just coming about. It is hard to get service due to not having an actual physical address.

Recommendations

A. Economic Development

Economic developers understand that unreliable broadband services will steer existing and potential business away from their communities. Today, a current status for each county's broadband capability is: Carbon and Emery Counties have access to broadband services that tend to be affordable and reliable services. Grand County is trying to attain competition to increase the number of service plans available for consumers. San Juan County administrators want to increase competition and reliability for its community members.

The following recommendations are central to increasing broadband service to support economic development:

- **Continue Local Coordination Efforts** – A local coordinating body should continue efforts and meet on a regular basis. The networking provided through the SEBPC creates a neutral and positive roll for a coordinating body. This will require some monetary support from the state for the AOGs to continue coordination. The AOG in Southern Utah would act as the lead facilitator for this region, gather current data and coordinate group meetings while disseminating federal and state information. If there is state/federal monetary assistance, the AOG could set up an application process to involve a neutral rating and ranking committee. The effort to build relationships with existing business, communication providers and state resources will help bridge the gap between rural areas and their broadband needs. As each southeastern county develops or nurtures their partnerships, this will bring about their own challenges and opportunities.

- **Develop a Regional Strategy to Increase Tribal Broadband Access** – The Utah portion of the Navajo Nation recognizes the importance of broadband access for businesses in natural resource exploration, education and medical support. In turn, this will enable the nation to prosper. The Navajo Nation should continue to work with the Utah Broadband Project,

SEUALG, natural resource companies and other local businesses, as well as UEN to increase capacity to this area. This effort will involve a combination of connecting tribal centers, gaining access to rights-of-way and aggregating demand by connecting providers with business customers, particularly the energy companies in the region. These relationships are moving forward in remote tribal areas and may possibly help these small rural communities embrace high-speed Internet. SEUALG and the Utah Broadband Project could be used as a resource to coordinate these efforts.

- **Increase Access to Tourist Areas** – Economic development in Grand and San Juan Counties rely heavily on tourism that brings in a significant source of income to their communities. Businesses in rural areas with a high volume of tourism understand high-speed broadband and reliable service are vital for their success. In order for these businesses to prosper, it is imperative for them to offer high-speed broadband for their customers. The SEUALG, the Utah Broadband Project, and local communities should work together to identify these areas and hold coordination meetings with providers to identify barriers and develop strategies to assist them in deploying to these regions.

Economic development planning and broadband development seem to go hand in hand. Therefore, the momentum of the SEBPC is necessary and recommends that state support come through the AOGs to continue this momentum.

B. Telecommunication Providers and Consumers

Providers have spoken about the high cost of new markets with their low return on investments; while consumers have spoken about the rudimentary services (in some areas). They both agree the difficulty with rural areas is the low population and vast land areas between communities.

The following recommendations are central to increasing broadband service to support both telecommunications providers and consumers:

- **Form Public-Private Partnerships to Increase Coordination** – Rural areas tend to have more acreage per individual dwellings and businesses; accordingly, evolving partnerships could come through community forums. These forums could start using the local Chamber of Commerce or business/industrial groups to lead a special committee that will bring notice to better broadband services and funding opportunities. Partnerships with community stakeholders, planners and public/private entities will further the opportunity for technology and reliable broadband services.

- **Provide a Mechanism for Consumer/Provider Coordination** – The SEUALG should provide an opportunity for broadband providers and consumers to share information about deployment needs and customer demands. The AOG could host workshops where providers present business plans and solicit community input for future deployment plans. Providers may also offer trainings to help educate consumers on technology. Providers should also consider developing targeted advertising materials that reflect the availability of services in each community.

As mentioned through the economic development recommendation above, a coordinating body should continue to bring stakeholders to the table. This coordinating body was offered through identifying and inviting industries to the SEBPC that was established as part of the Utah Broadband Project. Therefore each AOG should continue to be a contact point for each region in the state and facilitate a local coordinating body.

C. Education, Healthcare and Public Safety

Education, healthcare and public safety are sectors that benefit readily from broadband technology. Continuation of partnerships with local and state entities is a must. These sectors are the driving force behind rural communities' ability to connect to the world. Utah State University (USU), Utah Educational Network (UEN), the Nationwide Public Safety Broadband Network (NPSBN), and FirstNet are helping in the expansion of reliable and accessible broadband in the southeastern Utah rural areas.

The following recommendations are targeted at increasing broadband service to education, healthcare and public safety facilities:

- **Increase Utilization of Funding Mechanisms** – Education, healthcare and public safety facilities are all eligible for various levels of federal support. These funding mechanisms allow providers to connect these facilities at a discounted rate. The SEUALG should work with the Utah Broadband Project to identify facilities that do not currently have high-speed Internet access and educate them on the availability of these resources. The AOG should work with these facilities to coordinate with UEN, the Utah Telehealth Network and FirstNet to secure funding. Connecting these institutions in rural areas may be a first step in deploying higher speeds in underserved communities.

D. Local Governments

Coordination between local governments and broadband providers is an essential component of increasing access in rural communities.

The following recommendations are targeted at increasing broadband service by increasing coordination between local governments and broadband providers:

- **Amend Planning Documents to Encourage Broadband Deployment** – Broadband deployment and adoption for communities may rely heavily on local governments to amend their General Plans to address technology infrastructure. Technology is ever changing and must be a part of those plans. The Utah Broadband Project and SEUALG should work together to draft model language that individual communities may use to ensure that broadband infrastructure is considered in building plans and that empty conduit is installed in new developments and during road construction projects. Local communities should also develop a mechanism to inform broadband providers of upcoming construction so they can coordinate the installation of infrastructure.

- **Develop Strategies to Increase Competition** – County administrators should work with state and local providers to encourage competition for broadband services in their local areas. Local administrators should invite broadband providers to the table to discuss future community improvements and plans that will enhance broadband access. This local trust could bring in prospective businesses to the region.

- **Develop Strategies to Utilize Local Funding to Encourage Infrastructure Deployment** – Establishing partnerships with stakeholders to include providers, businesses owners, consumers of broadband, educational institutions and state/tribal governments can give a community an edge. Encouraging the use of "Payments in Lieu of Taxes" or PILT, private endowments, Co-ops with pledges, Transit Room Taxes for development and other legislation that can benefit local communities could all help provide initial broadband deployment projects or sustain broadband providers through return on investments periods that are longer than normal.

E. Recommendation Summary

- *Economic Development:* The SEBPC is necessary and recommends the state support come through the AOGs to continue collective momentum.
- *Education, Healthcare and Public Safety:* Continuation of partnerships with local and state entities are an essential piece in bringing high learning standards and quality healthcare to rural communities.
- *Telecommunication Providers and Consumers:* Customers and providers should communicate more about their needs for faster and more efficient service. Providers should listen to their customers' needs, help educate consumers on technology and advertise appropriately for the area. The AOG for each region should continue being the coordinating body.
- *Local Governments:* County administrations should work with state and local providers to encourage competition for broadband services in their local areas. Local administrators should invite broadband providers to the table to discuss future community improvements and General Plans.

Conclusion

The contents of this document are a current reflection of broadband capabilities for four counties in the Southeastern region. The Southeastern region accounts for Carbon, Emery, Grand and San Juan Counties. The American people in this area understand the wide open terrain while incorporating that spirit of the west in 21st Century technology. Rural communities thrive on open spaces, entrepreneurship and the need for advancement. Broadband services provide quality of life through reaching out to distant family, opening up businesses, marketing existing business, educating oneself and having the freedom to choose their entertainment.

Reliable broadband services tend to power our daily lives in the southeastern region of Utah. Accessibility brings about a quality of life and responsibility where individuals are able to be productive citizens. The following list attributes to our daily life:

- Education occurs daily through university classes to the most to remote areas of our region;
- Laboratory results are read immediately by doctors five hours away;
- School children are able to research their chosen topic;
- Credit card transactions are processed immediately (even in blizzard conditions);
- Encapsulating entrepreneurship with resourcefulness at your fingertips;
- Tourists can book a hotel in remote canyon land regions;
- A service veteran can seek medical care from a doctor at the Veterans Hospital in Salt Lake City through Telehealth at a local clinic;
- Unemployed individuals can explore training employment services readily;
- And public library and access areas are an open door to underserved and unserved population areas allowing for patrons to advance themselves.

Technology planning is an active process and will make this plan age almost immediately. However, the usefulness of this plan is vital until all of Southeastern Utah region is connected with reliable, accessible and affordable broadband services. As technology and implementation of plans succeed, fluctuation will occur in local economies and demographic statuses.

Appendix A: Maps

Overview for Southeastern Region:

Map 1: Southeastern Land Ownership
Map 2: Southeastern Population
Map 3: Southeastern Terrain
Map 4: Southeastern Transmission Lines

Each County—Carbon, Emery, Grand and San Juan:

<u>Wireless Broadband Provider Speeds</u>

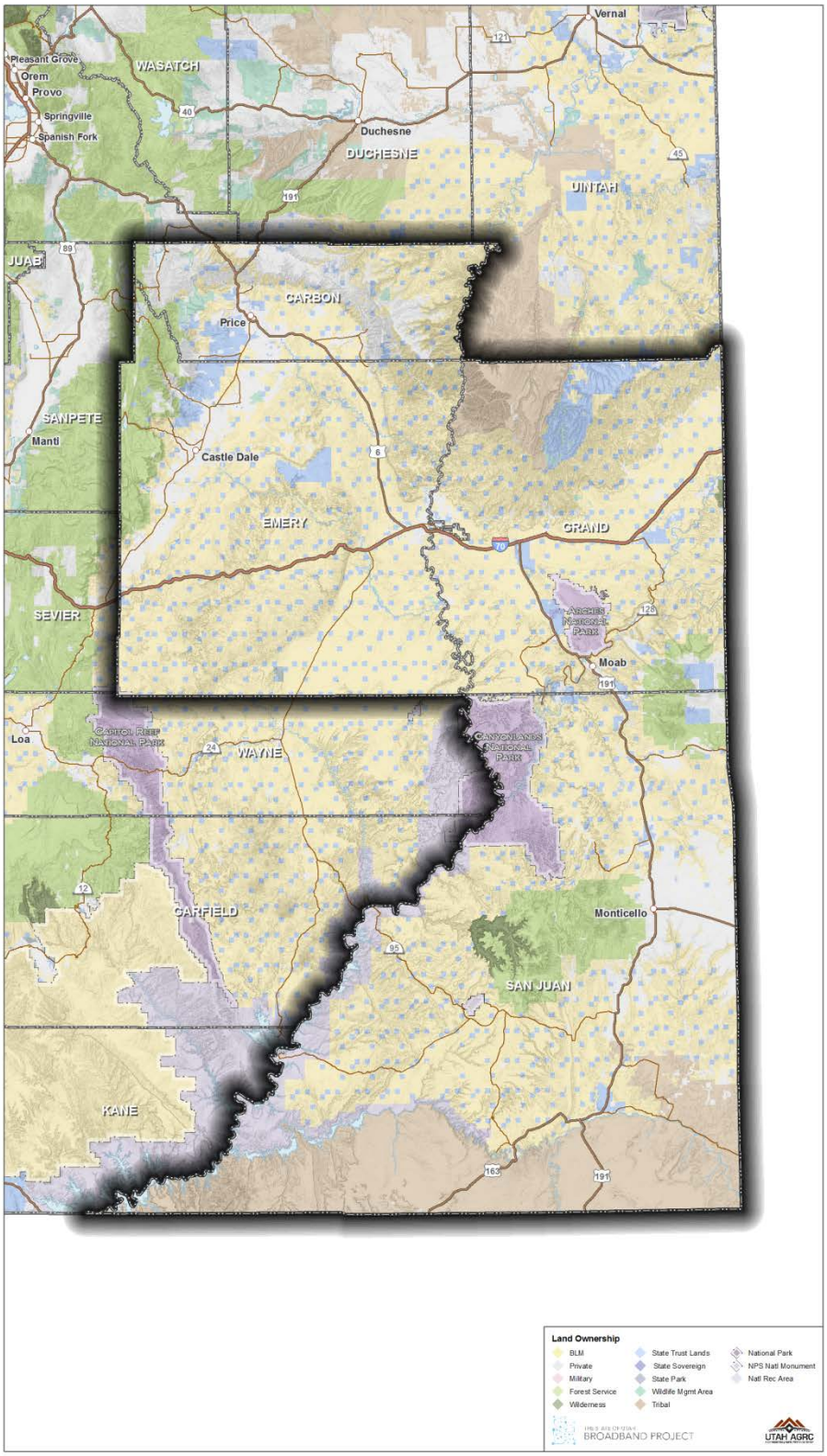
Map 5.1: Carbon County Wireless Download Speeds
Map 5.2: Emery County Wireless Download Speeds
Map 5.3: Grand County Wireless Download Speeds
Map 5.4 San Juan County Wireless Download Speeds

<u>Fixed Broadband Providers Speeds</u>

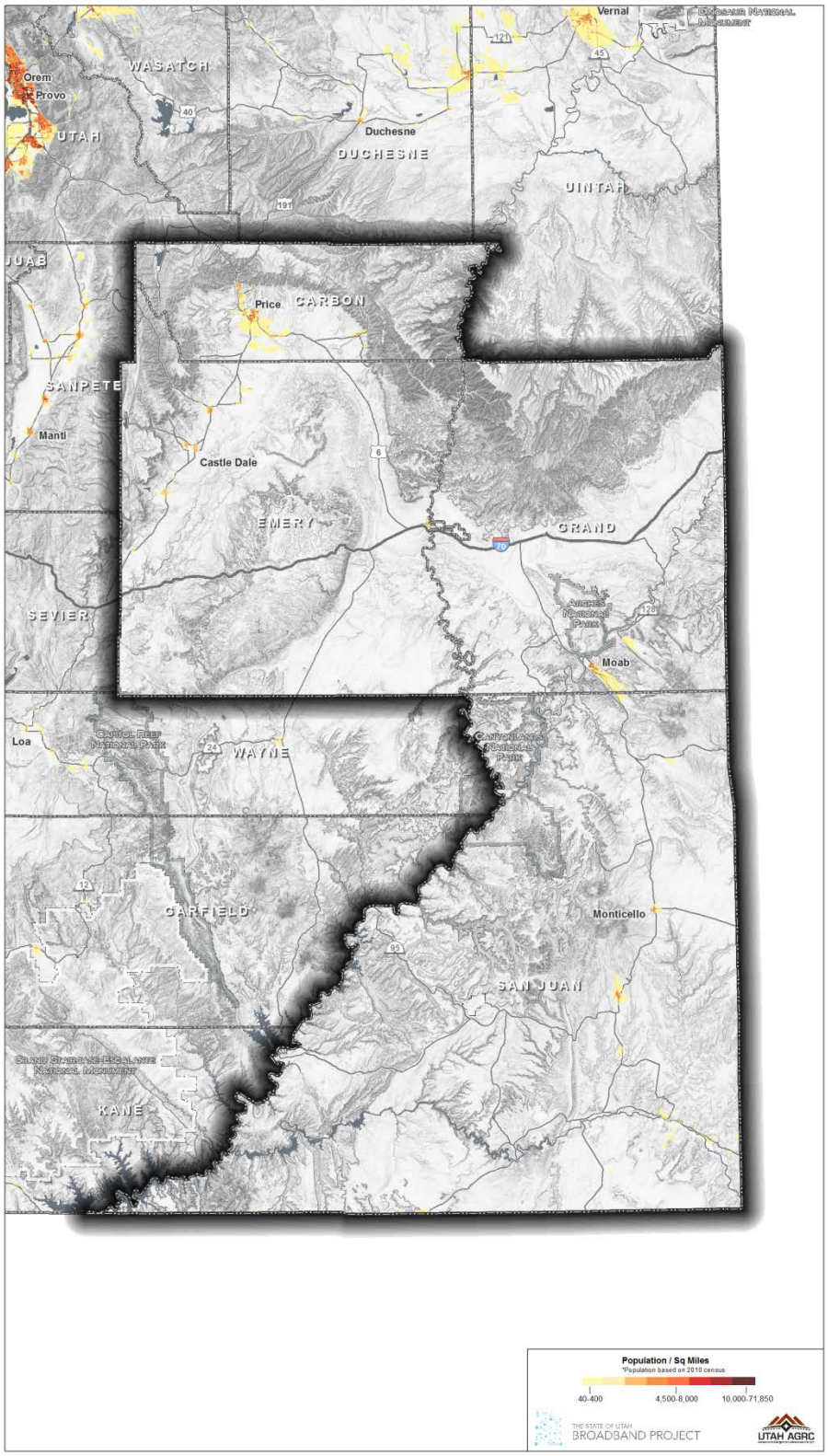
≥ 3 Mbps
≥ 10 Mbps
≥ 25 Mbps

Map 6.1: Carbon County Fixed Download Speeds
Map 6.2: Emery County Fixed Download Speeds
Map 6.3: Grand County Fixed Download Speeds
Map 6.4: San Jan County Fixed Download Speeds
Map 7.1: Carbon County Fixed Upload Speeds
Map 7.2: Emery County Fixed Upload Speeds
Map 7.3: Grand County Fixed Upload Speeds
Map 7.4 San Juan County Fixed Upload Speeds
Map 8.1: Carbon County Fixed Broadband Providers Speeds at 3 Mbps or Higher
Map 8.2: Emery County Fixed Broadband Providers Speeds at 3 Mbps or Higher
Map 8.3: Grand County Fixed Broadband Providers Speeds at 3 Mbps or Higher
Map 8.4: San Jan County Fixed Broadband Providers Speeds at 3 Mbps or Higher
Map 9.1: Carbon County Fixed Broadband Providers Speeds at 10 Mbps or Higher
Map 9.2: Emery County Fixed Broadband Providers Speeds at 10 Mbps or higher
Map 9.3: Grand County Fixed Broadband Providers Speeds at 10 Mbps or Higher
Map 9.4: San Jan County Fixed Broadband Providers Speeds at 10 Mbps or Higher
Map 10.1: Carbon Fixed Broadband Providers Speeds at 25 Mbps or Higher
Map 10.2: Emery County Fixed Broadband Providers Speeds at 25 Mbps or Higher
Map 10.3: Grand County Fixed Broadband Providers Speeds at 25 Mbps or Higher
Map 10.4: San Juan County Fixed Broadband Providers Speeds at 25 Mbps or Higher

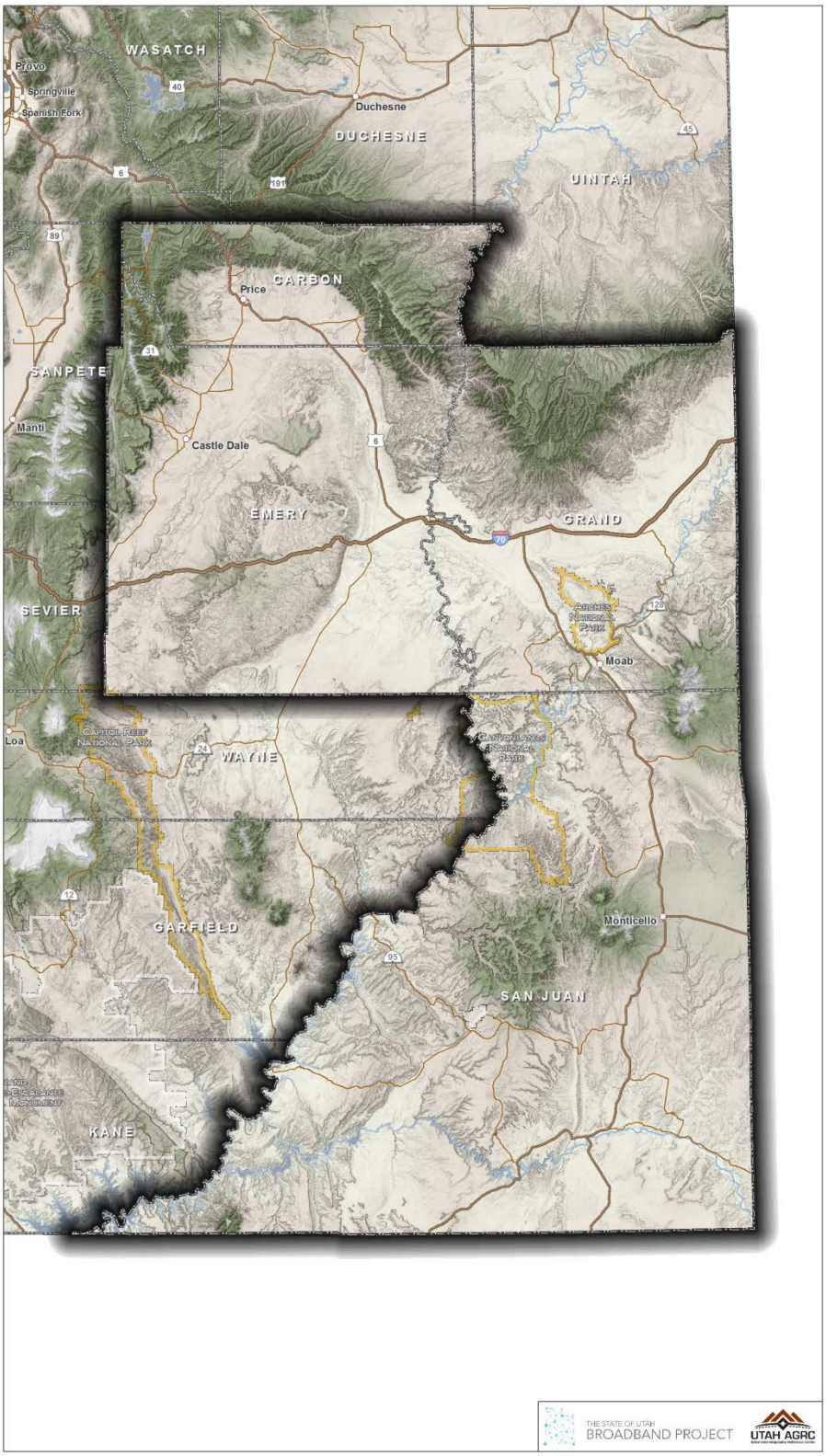
Map 1: Southeastern Land Ownership



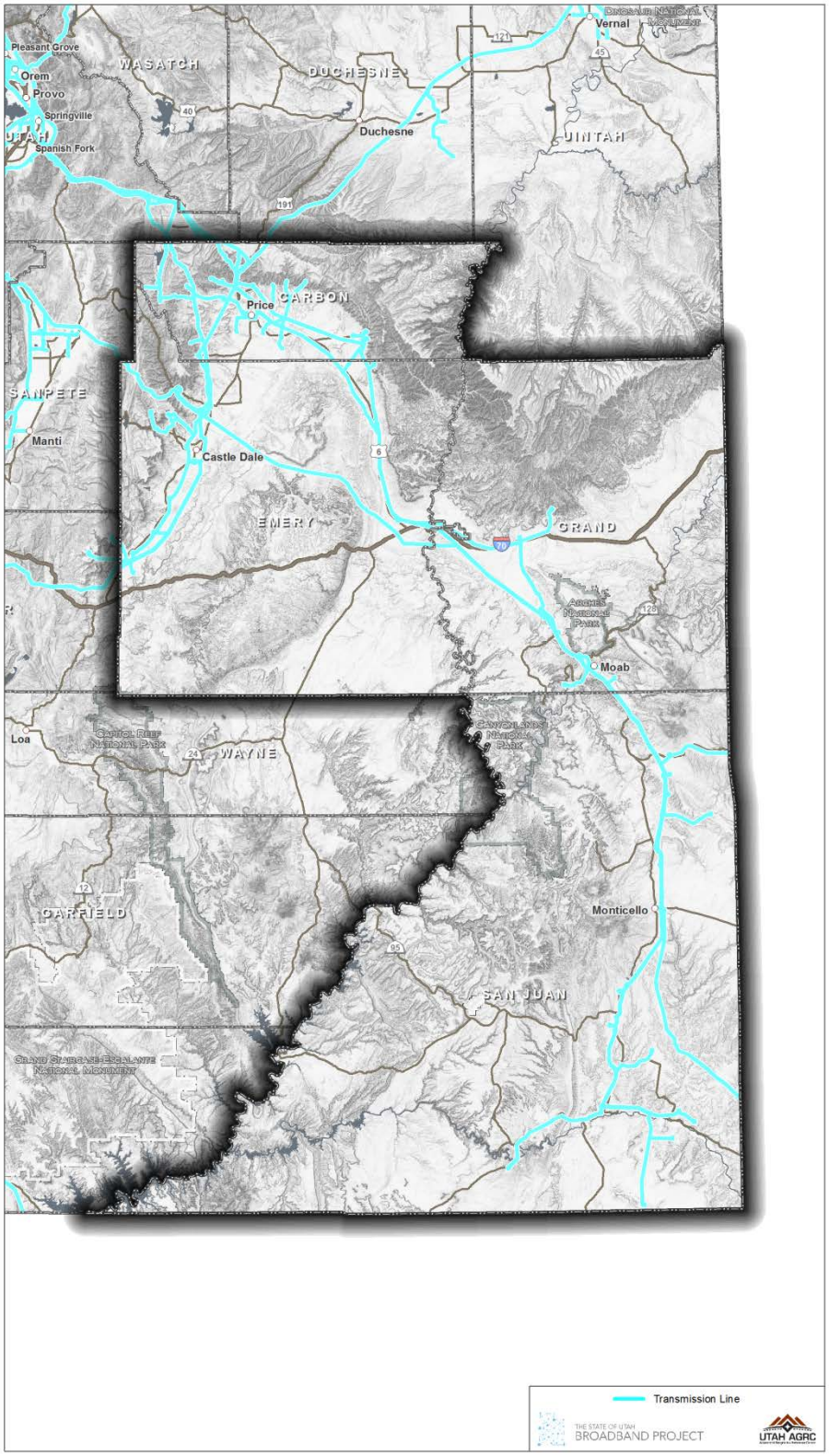
Map 2: Southeastern Population



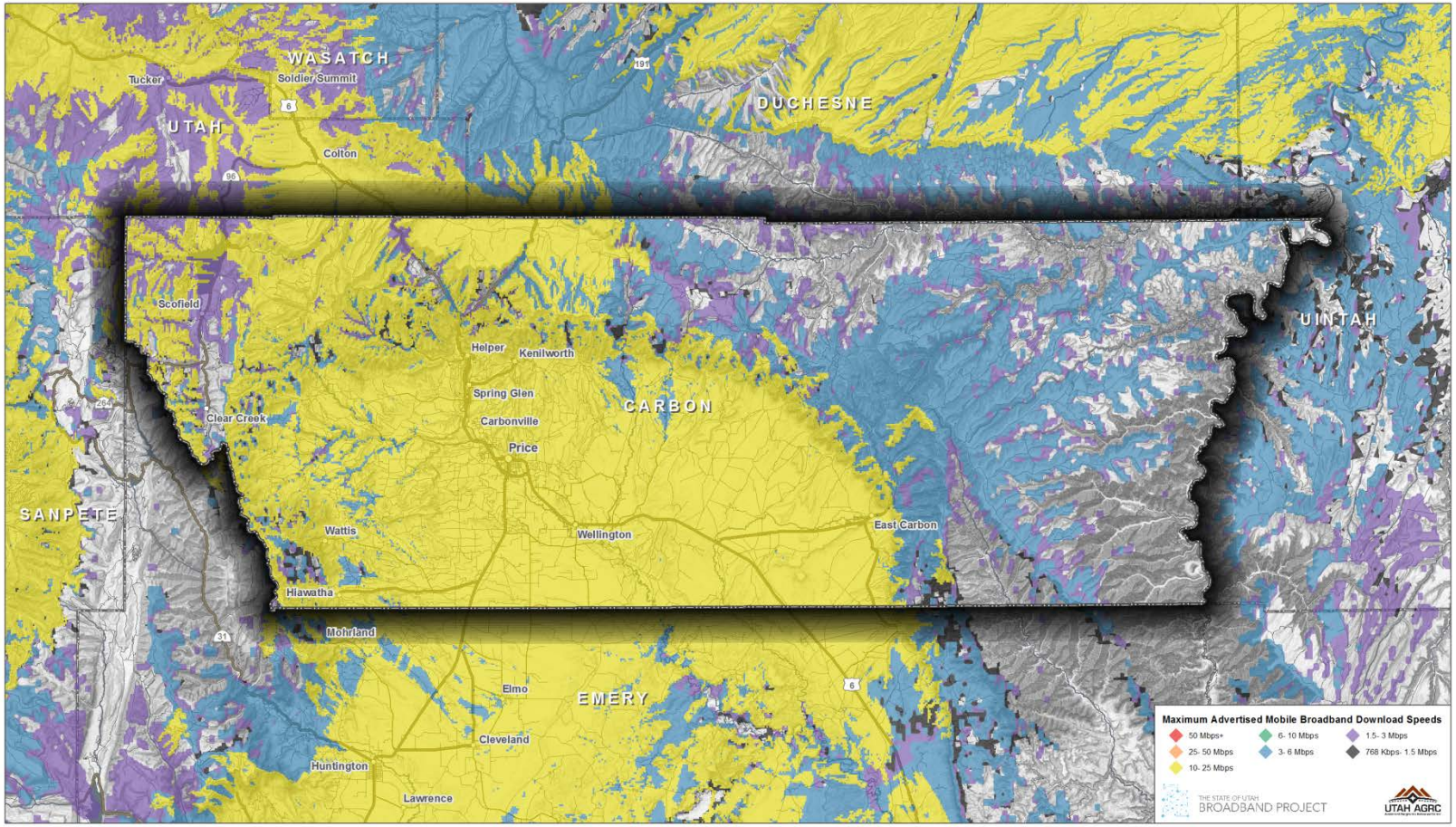
Map 3: Southeastern Terrain



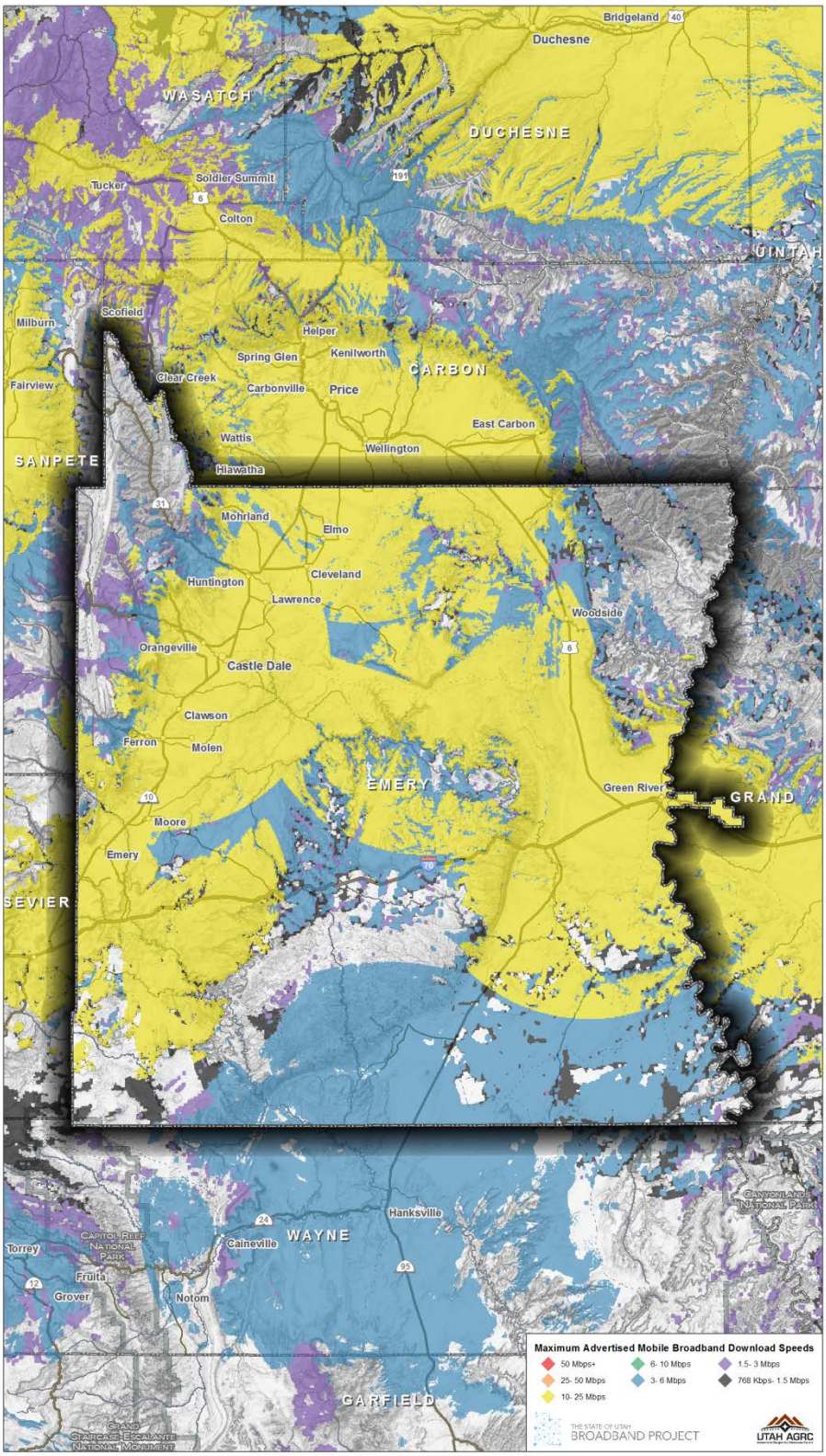
Map 4: Southeastern Transmission Lines



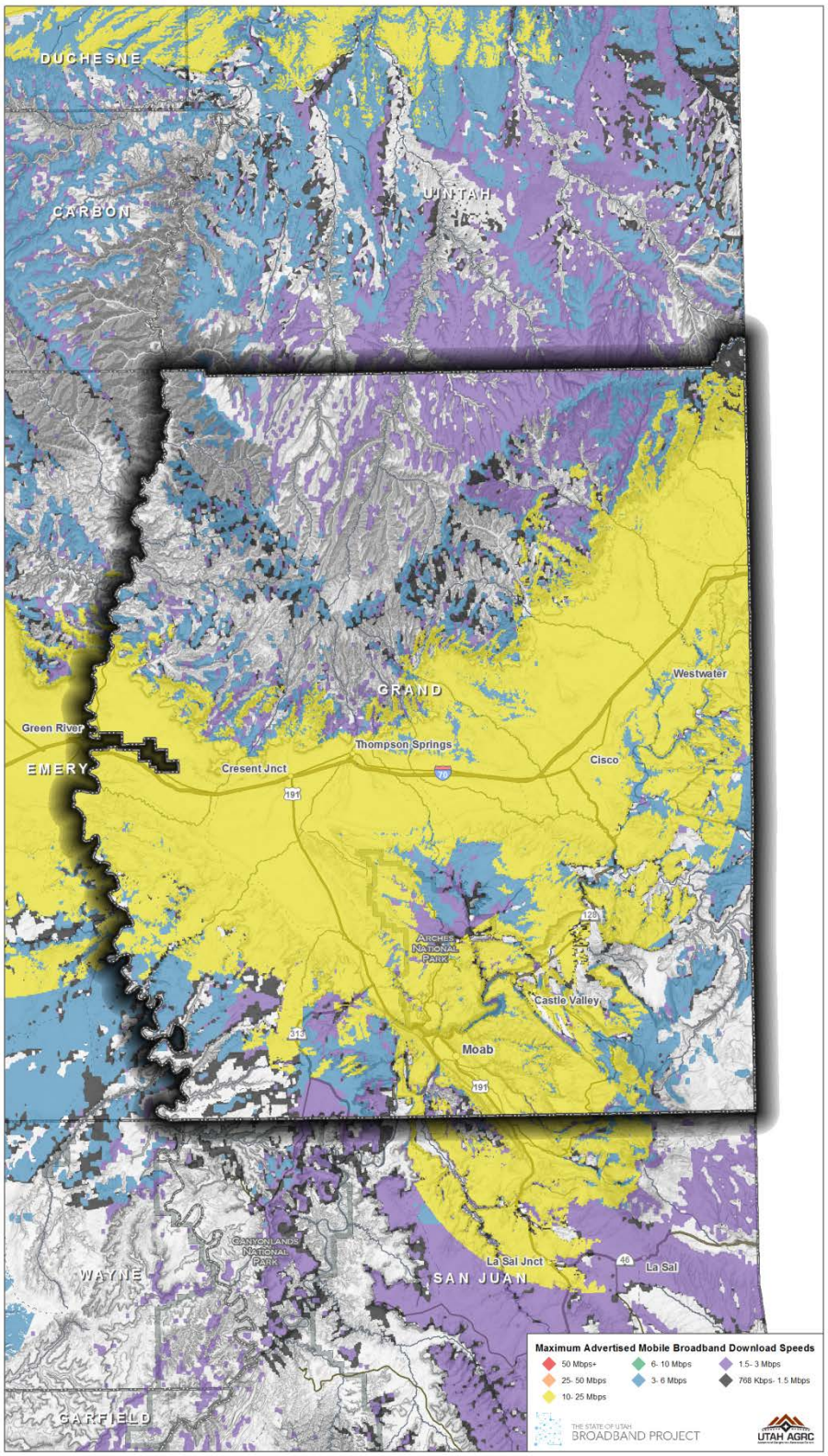
Map 5.1: Carbon County Wireless Download Speeds



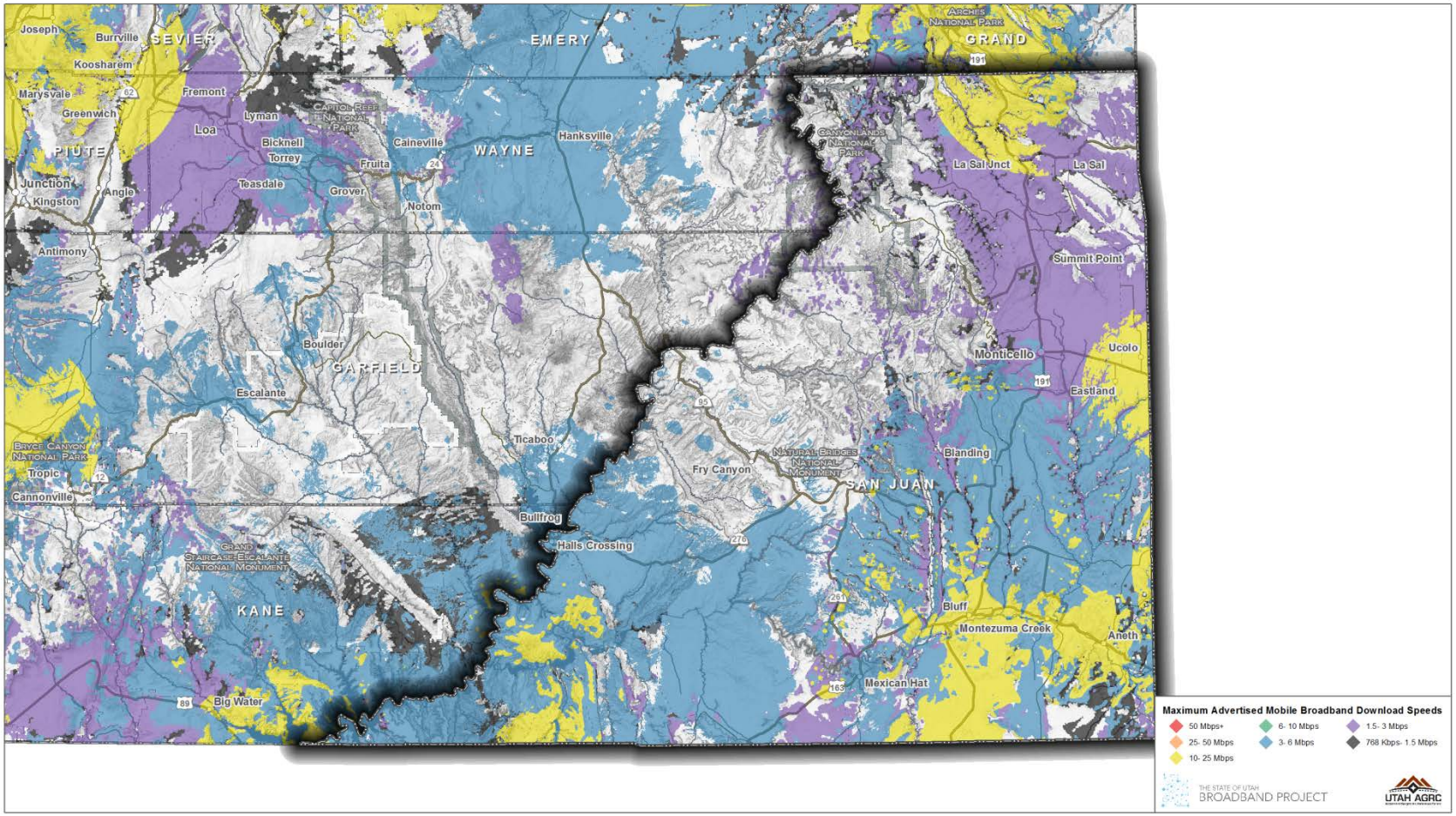
Map 5.2: Emery County Wireless Download Speeds



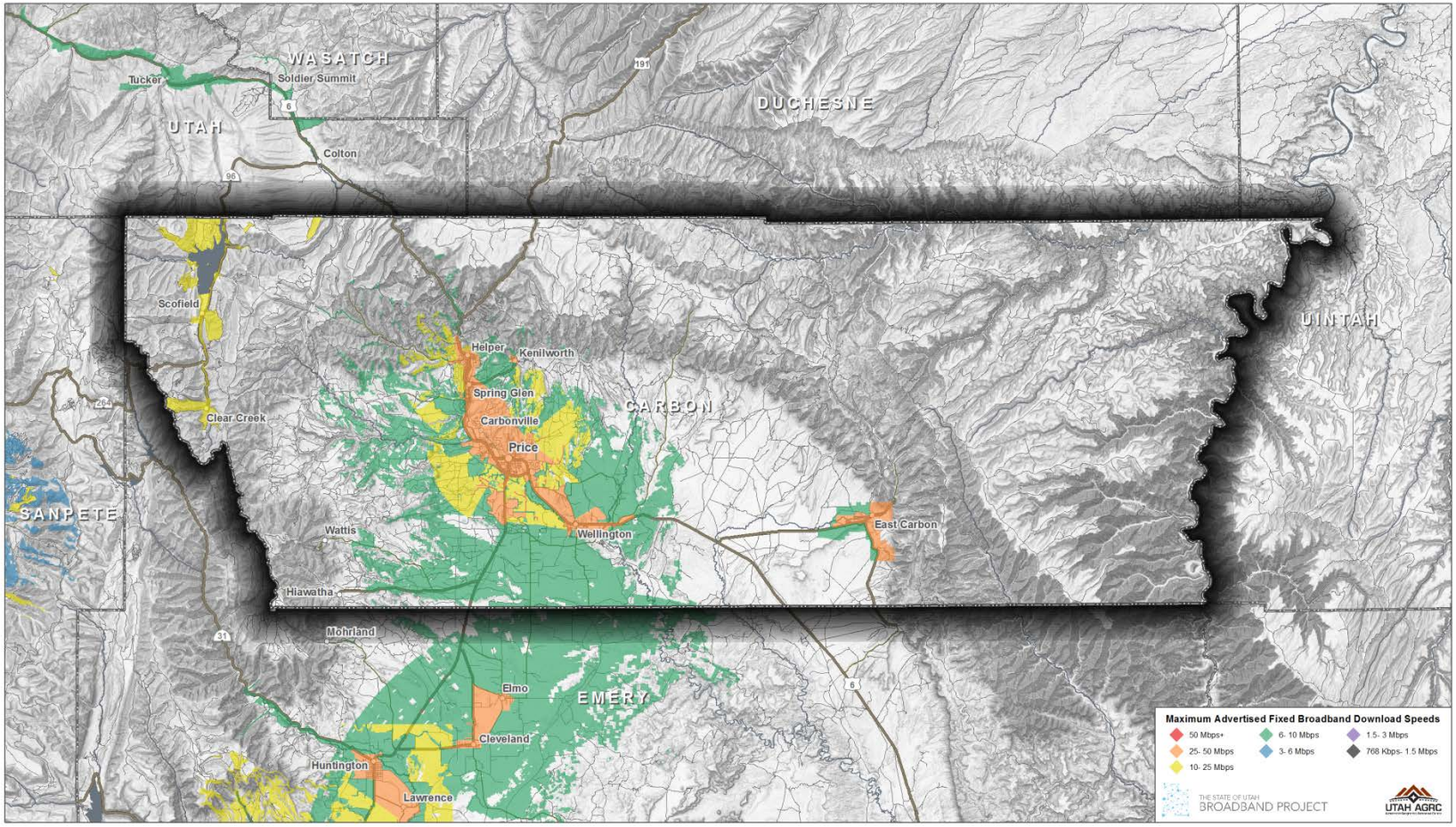
Map 5.3: Grand County Wireless Download Speeds



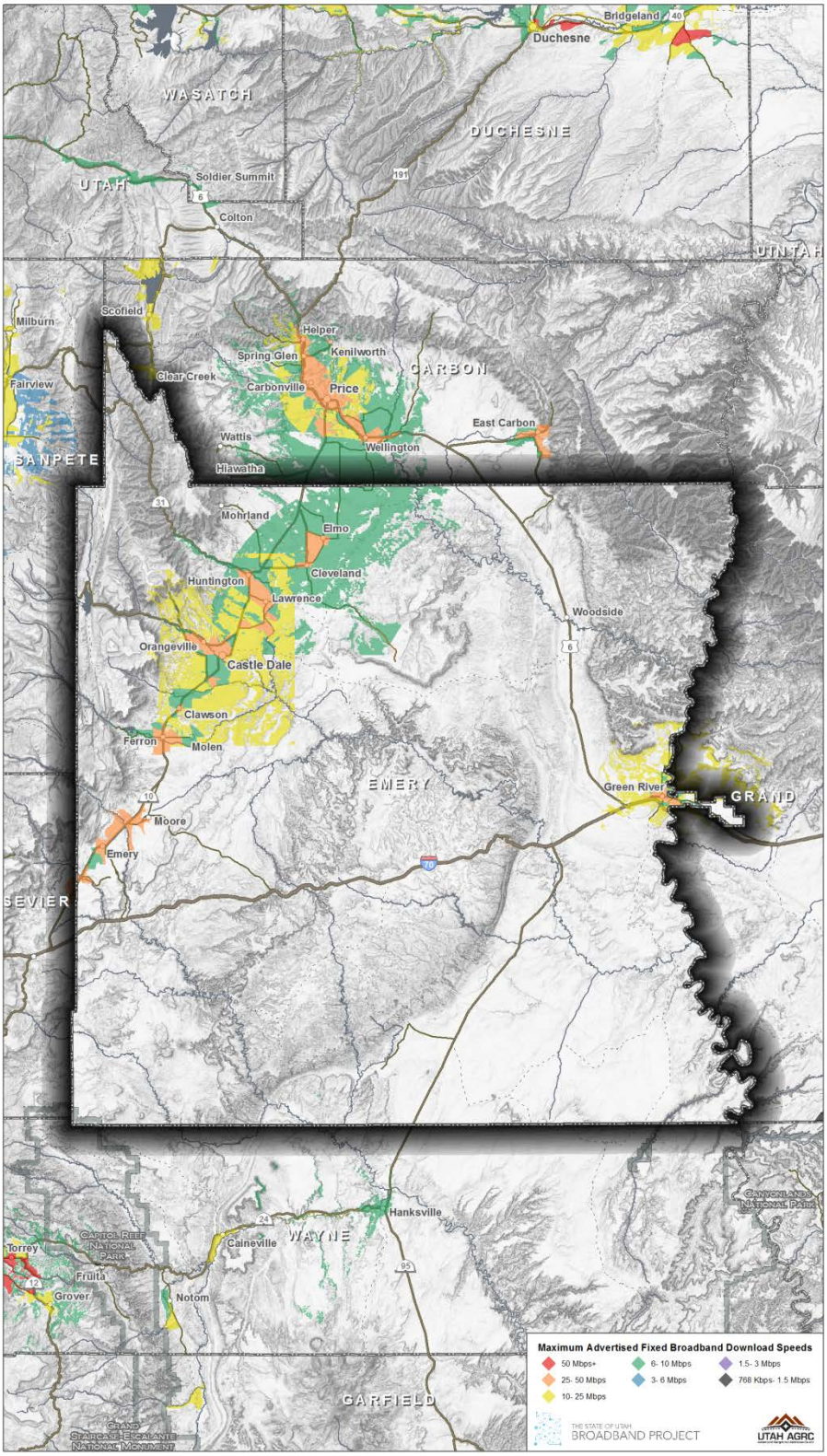
Map 5.4 San Juan County Wireless Download Speeds



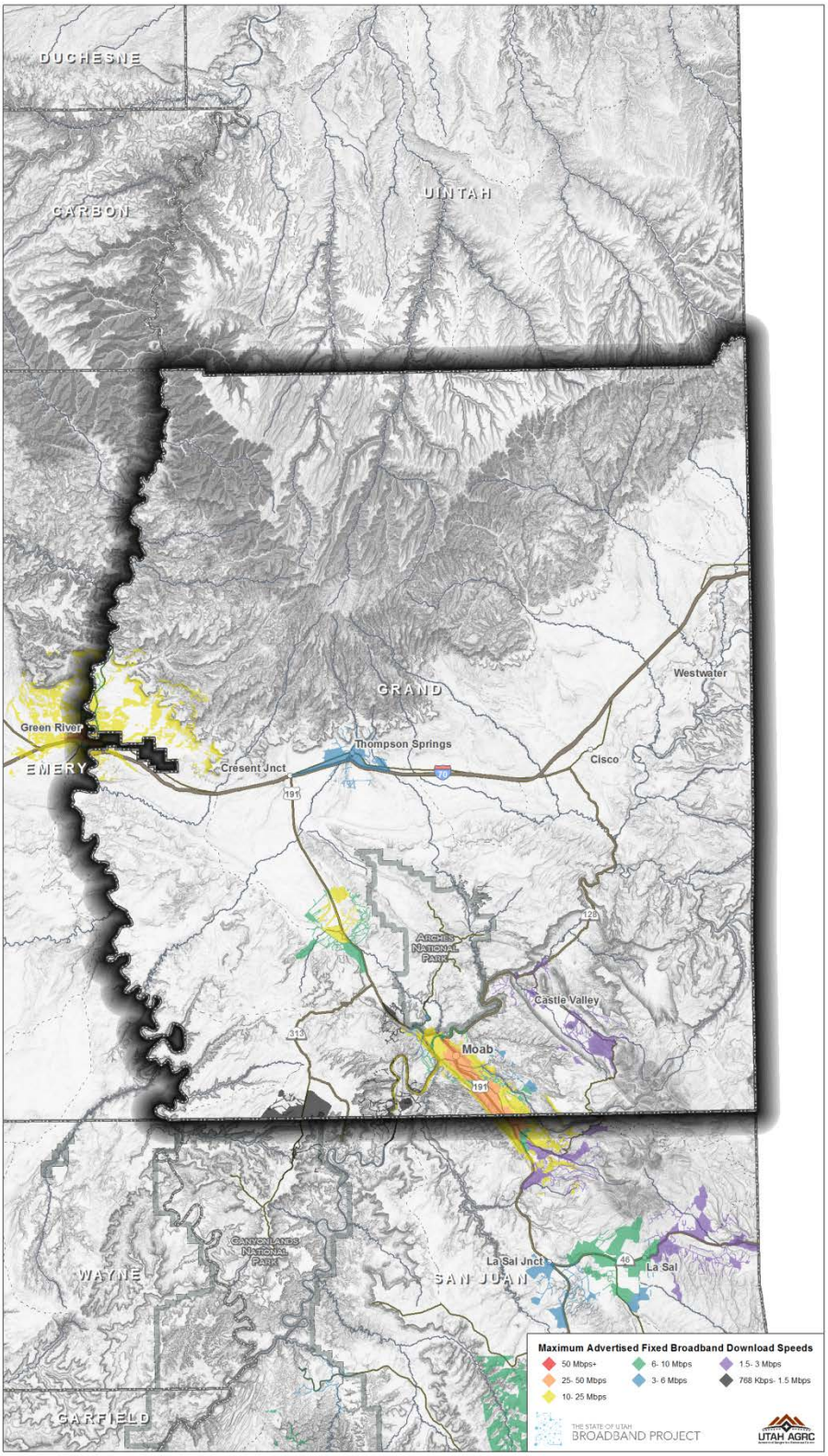
Map 6.1 Carbon County Fixed Download Speeds



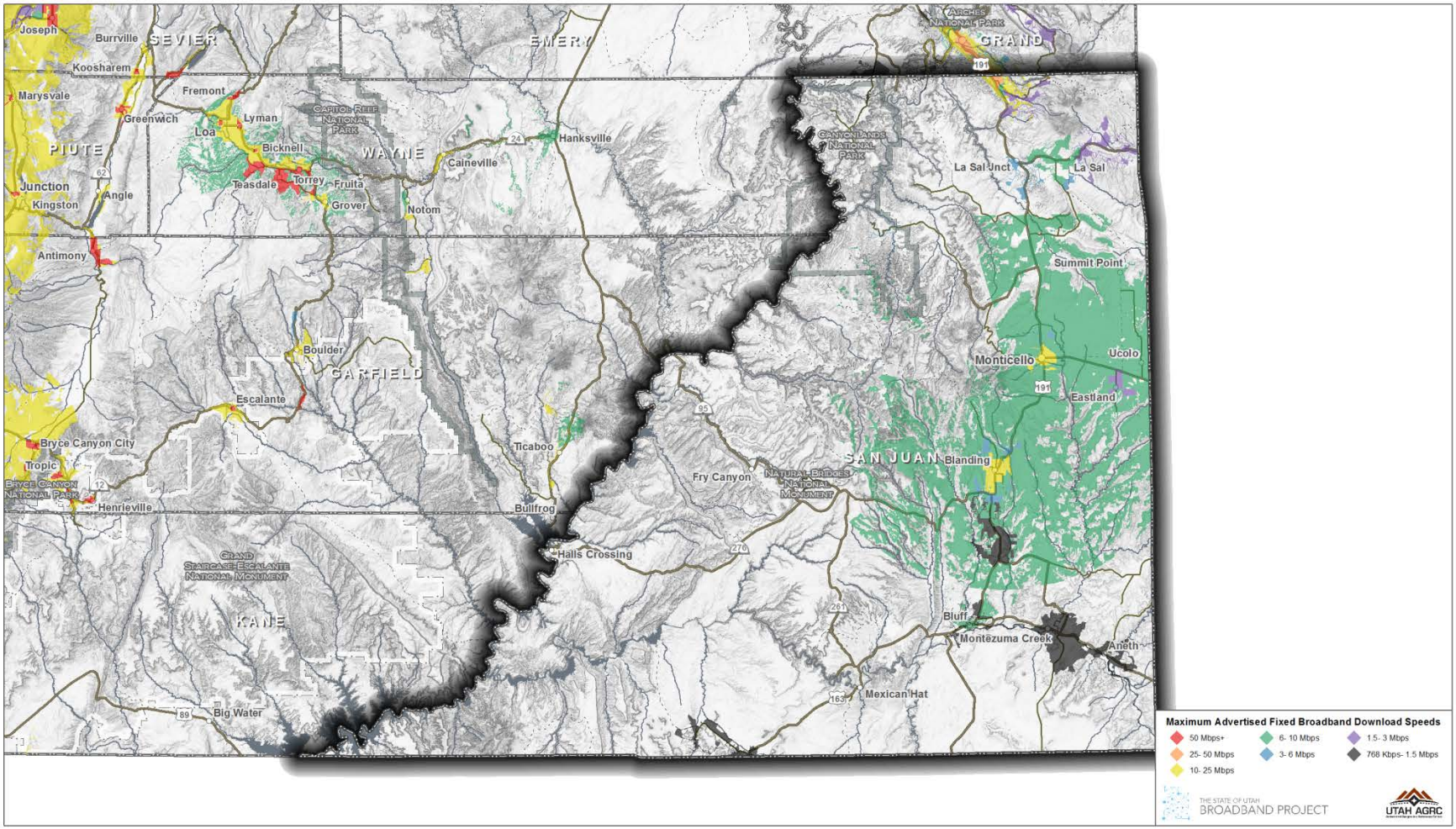
Map 6.2: Emery County Fixed Download Speeds



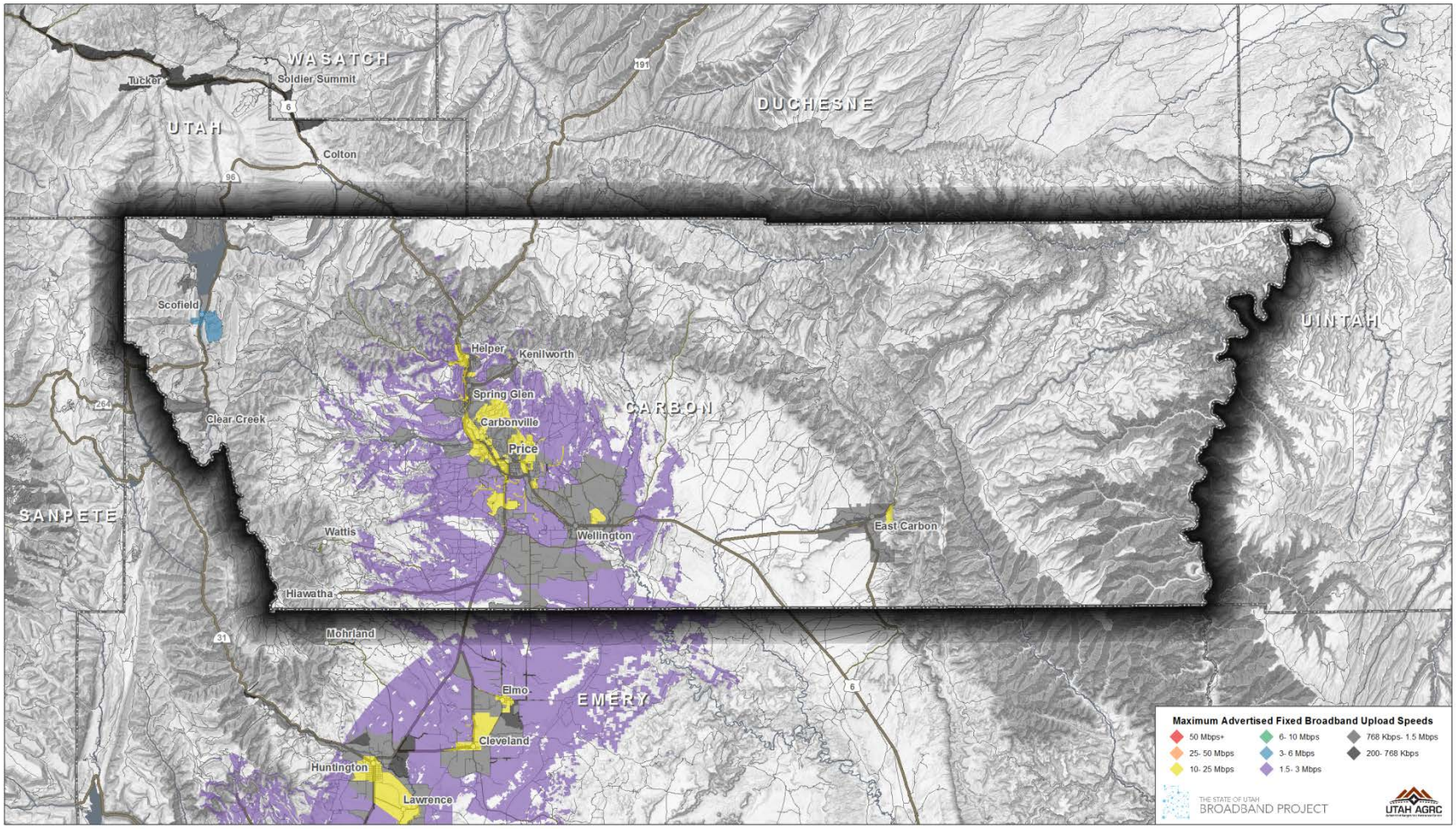
Map 6.3: Grand County Fixed Download Speeds



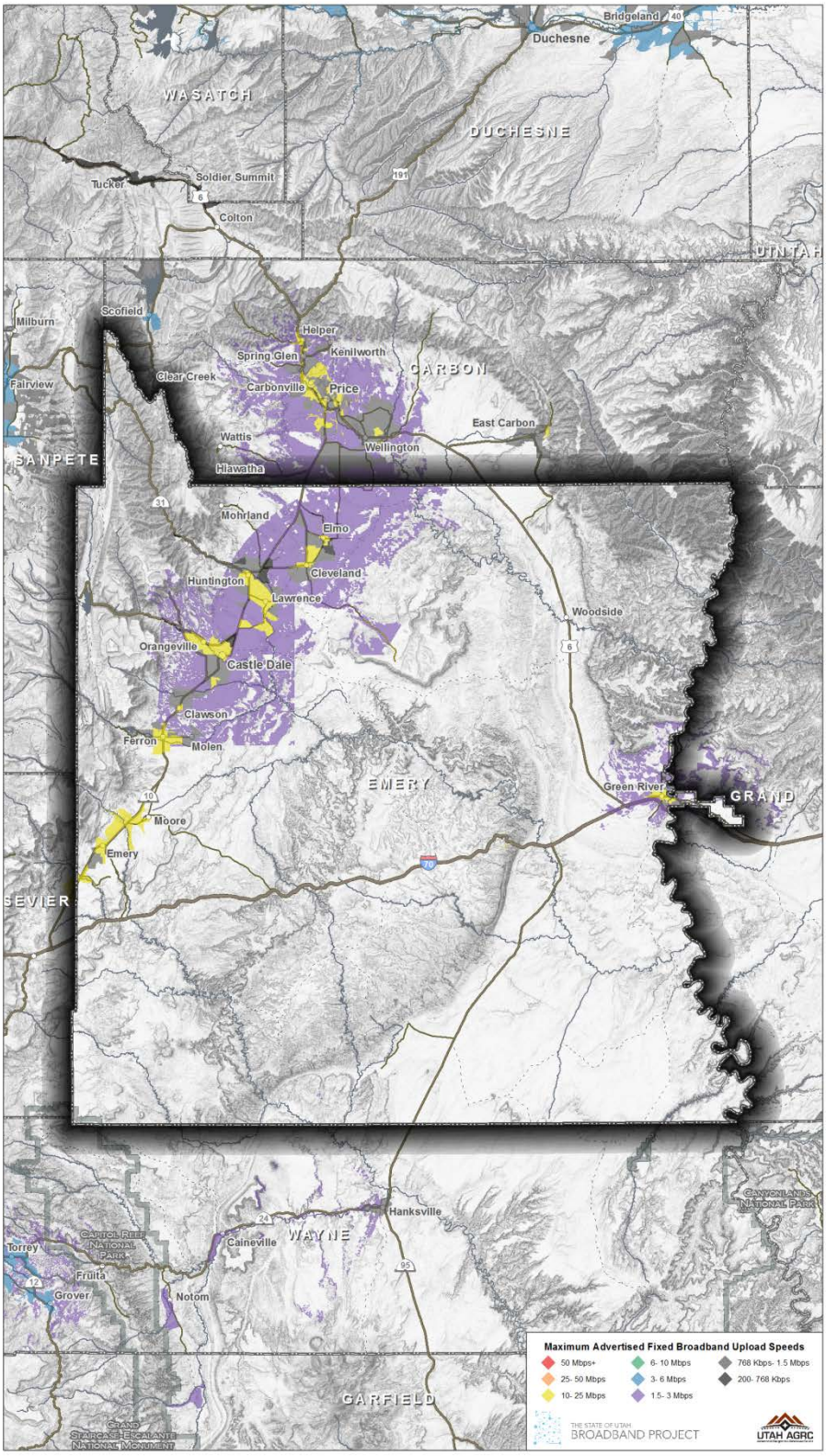
Map 6.4: San Jan County Fixed Download Speeds



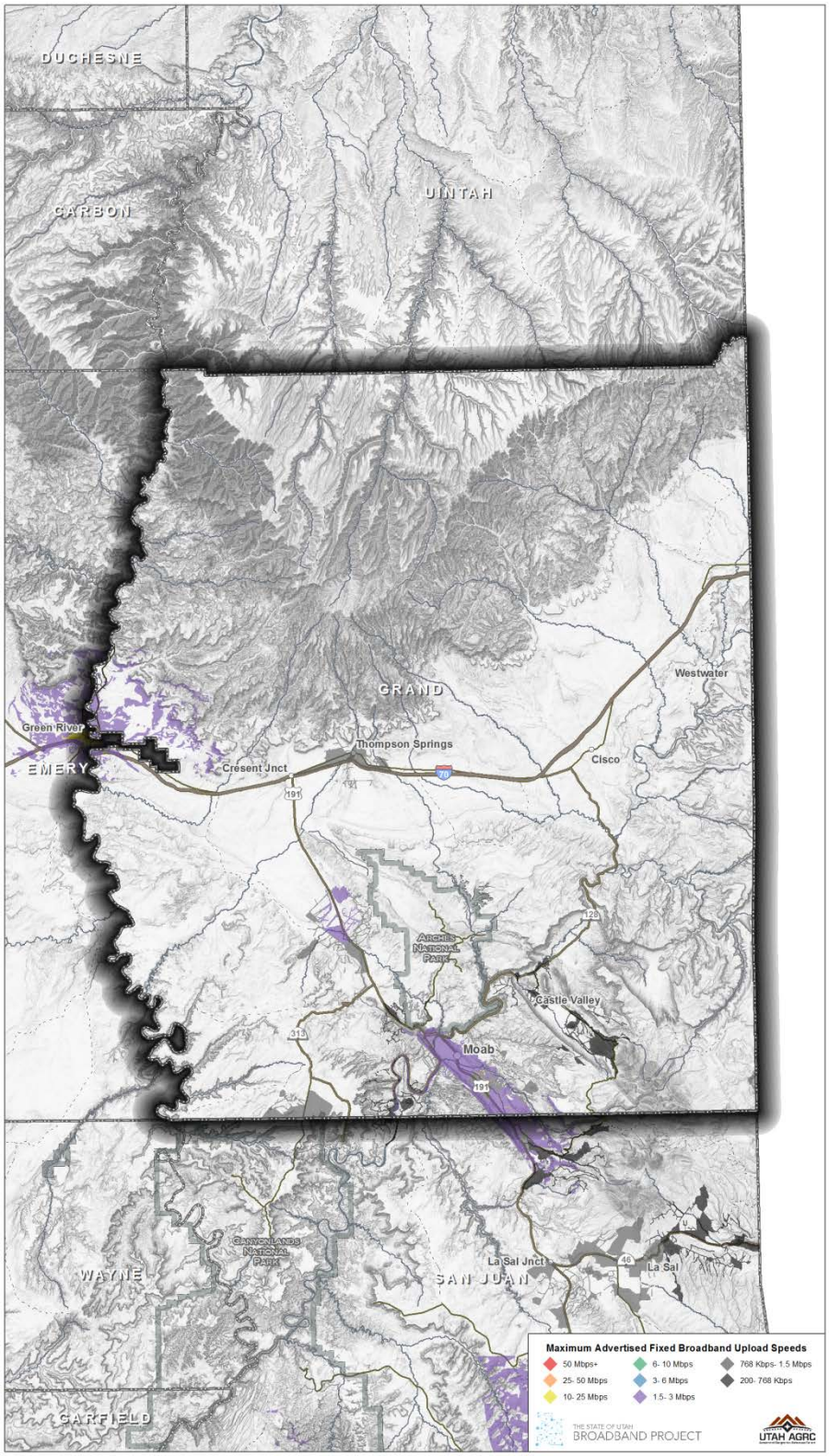
Map 7.1: Carbon County Fixed Upload Speeds



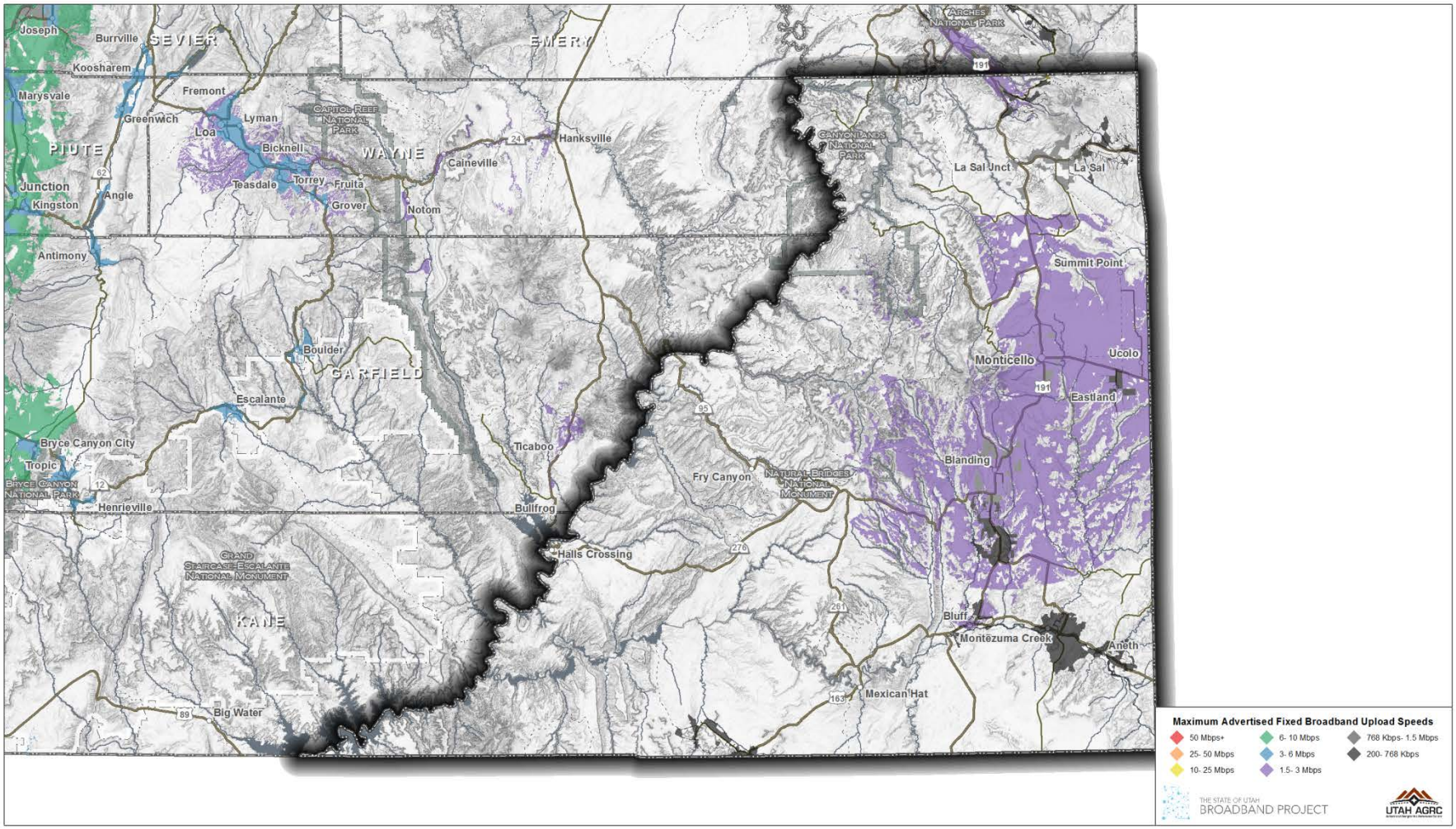
Map 7.2: Emery County Fixed Upload Speeds



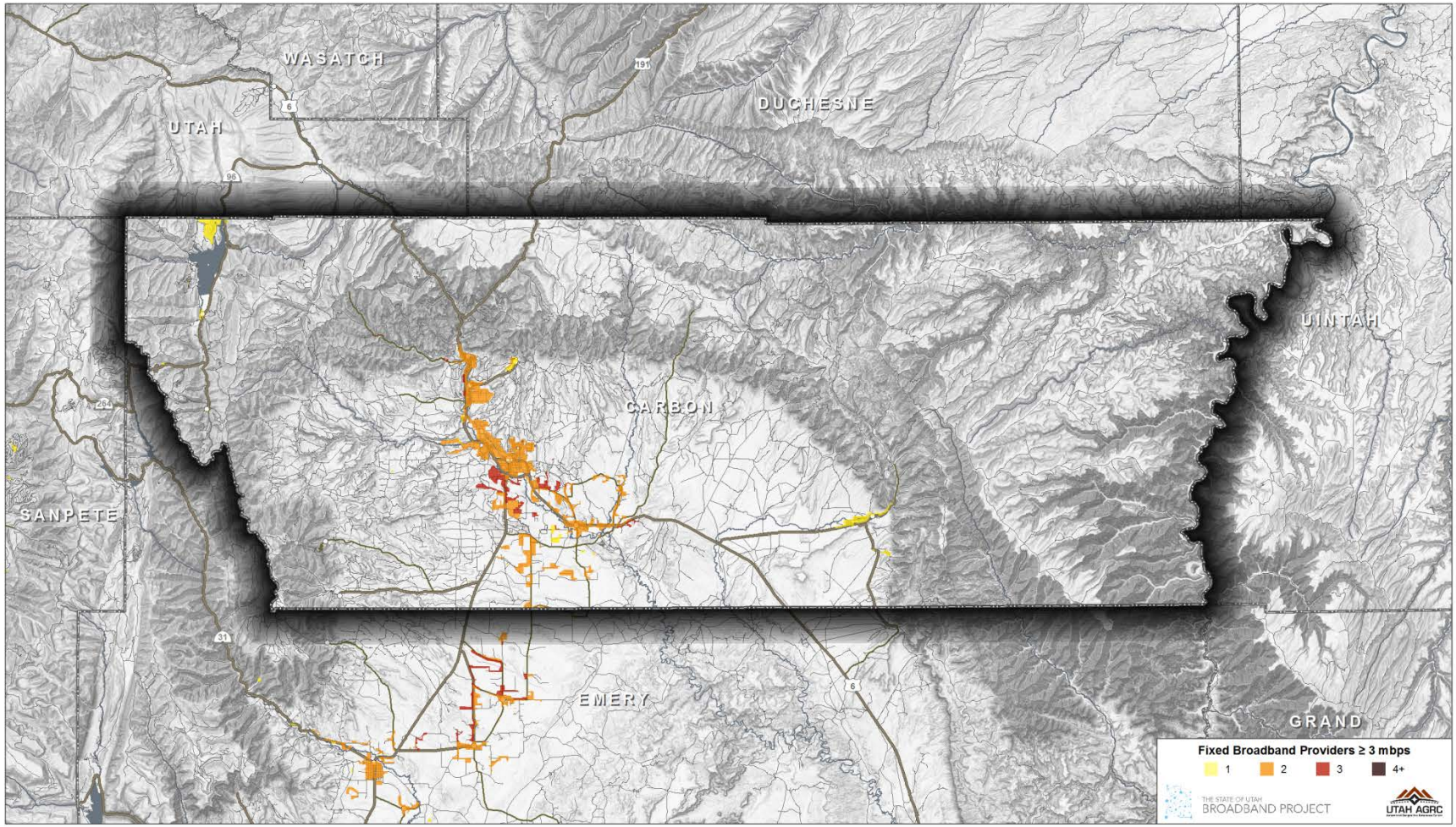
Map 7.3: Grand County Fixed Upload Speeds



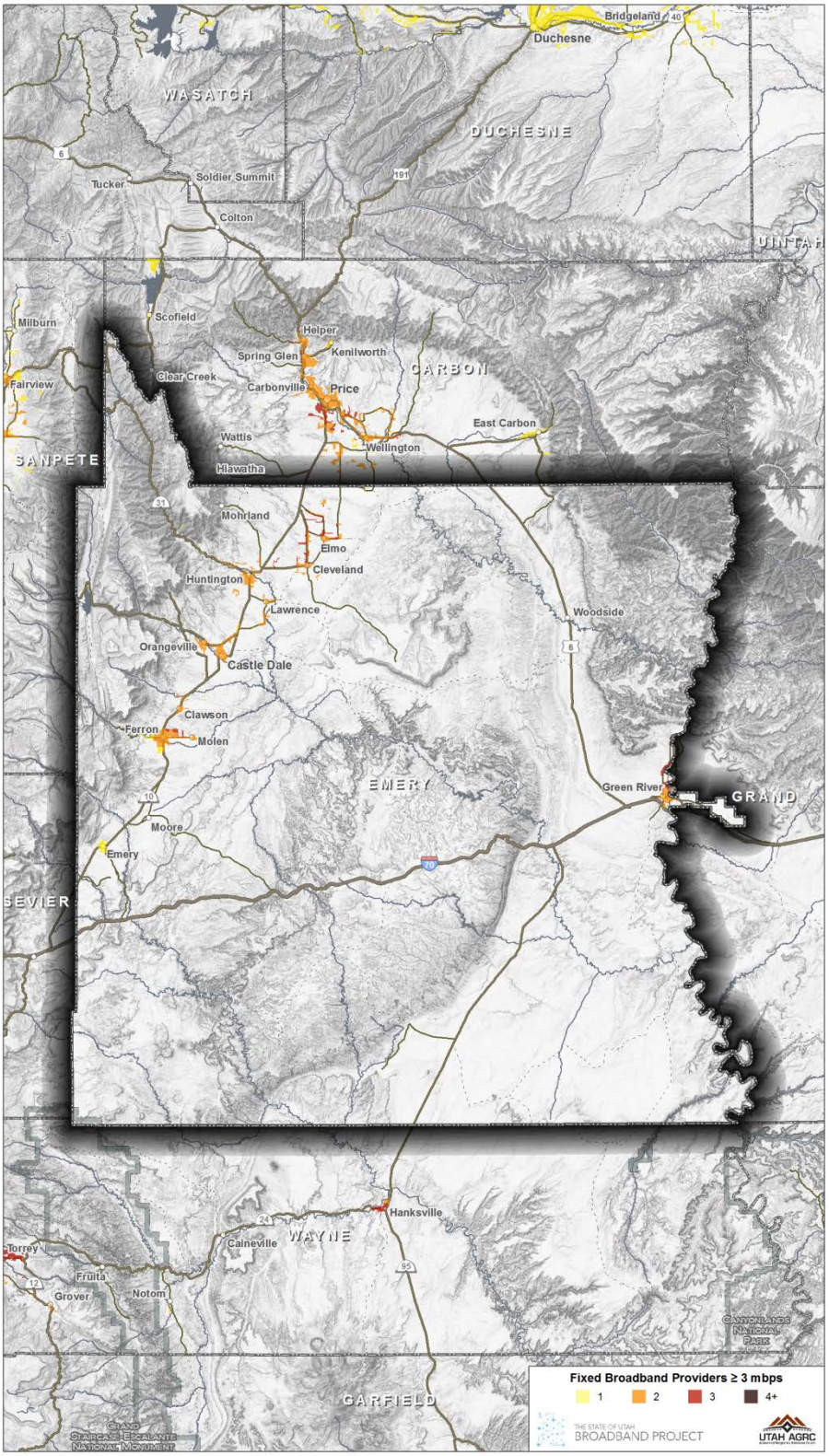
Map 7.4 San Juan County Fixed Upload Speeds



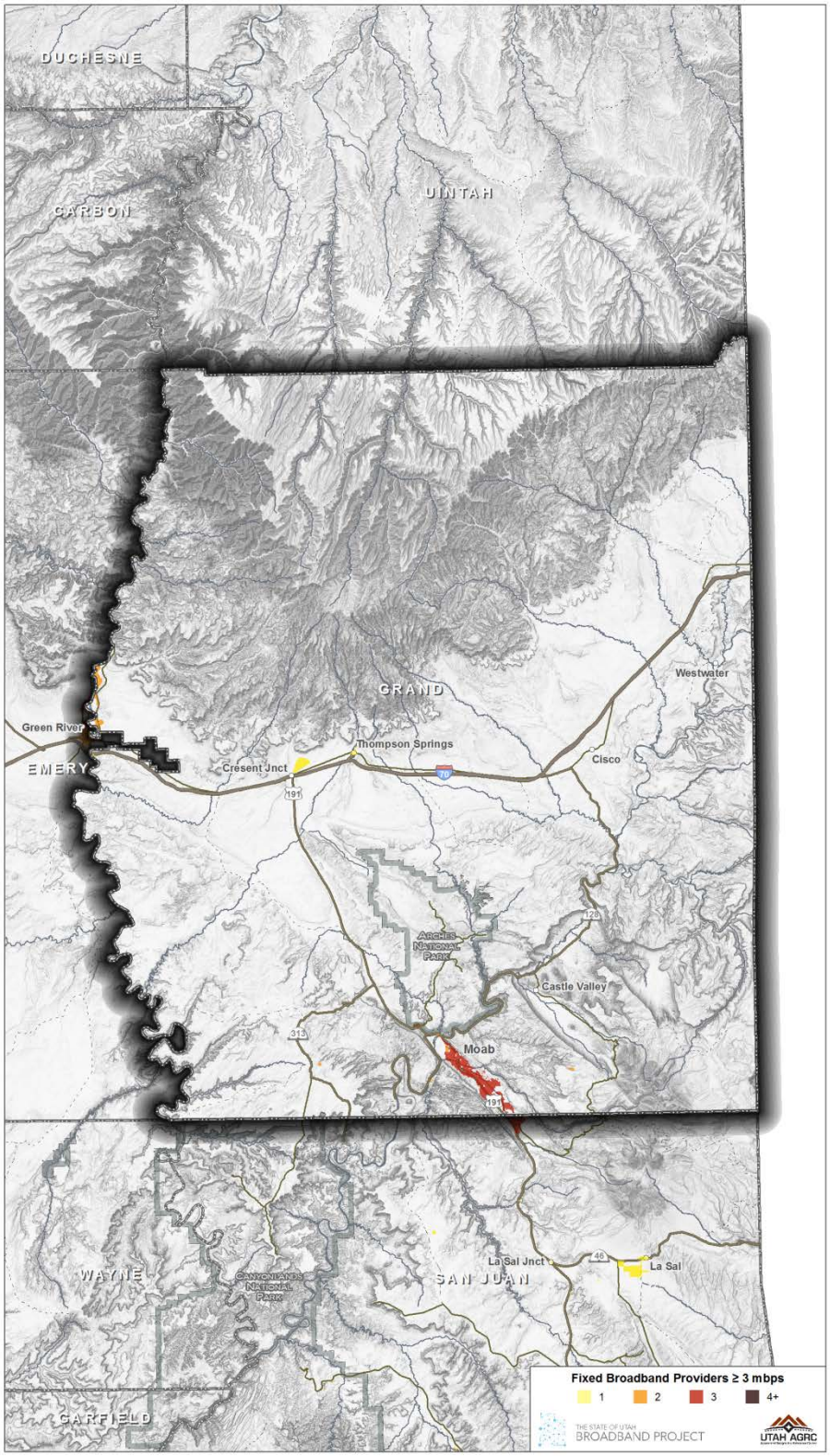
Map 8.1: Carbon County Fixed Broadband Providers Speeds at 3 Mbps or Higher



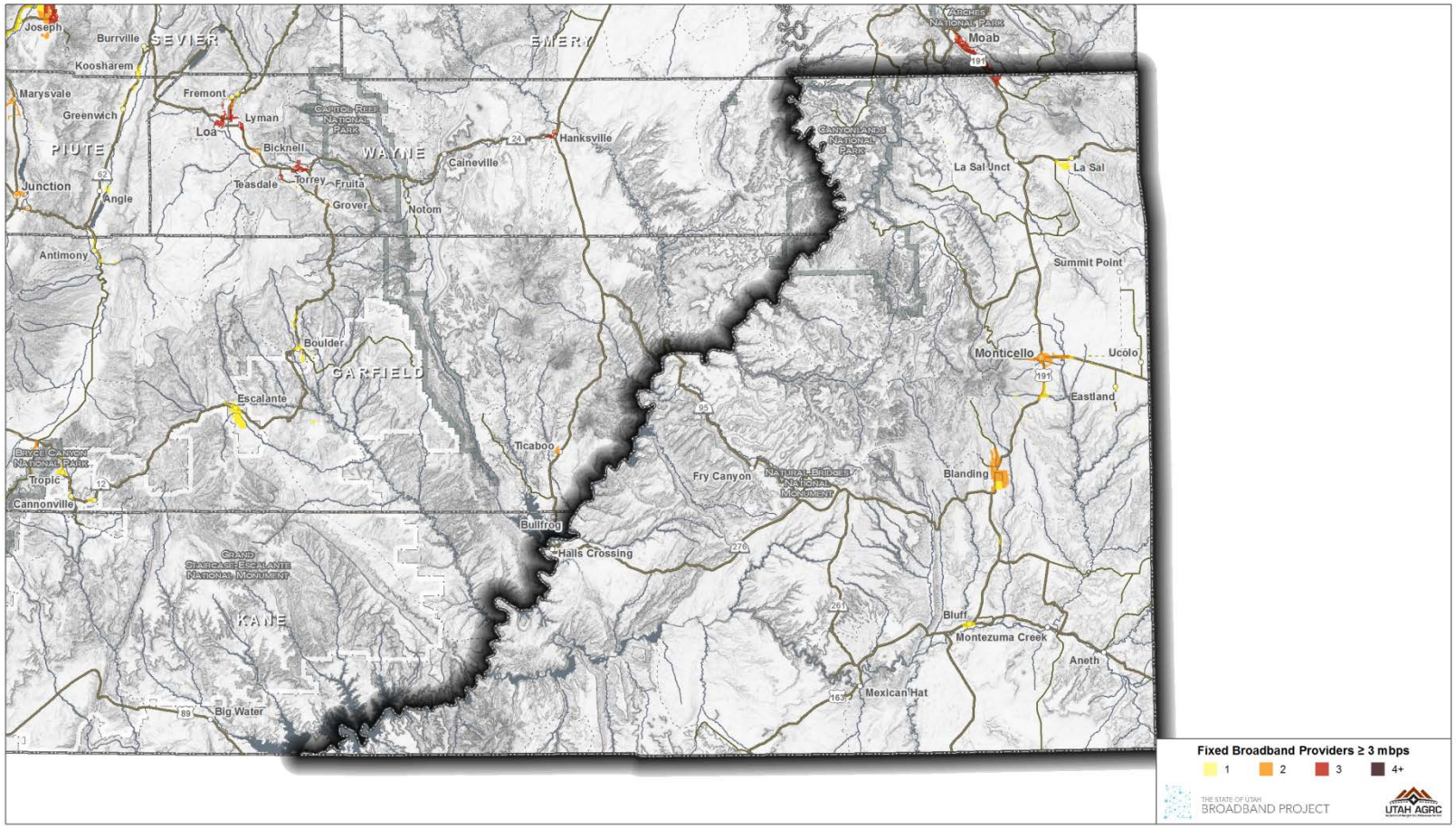
Map 8.2: Emery County Fixed Broadband Providers Speeds at 3 Mbps or Higher



Map 8.3: Grand County Fixed Broadband Providers Speeds at 3 Mbps or Higher

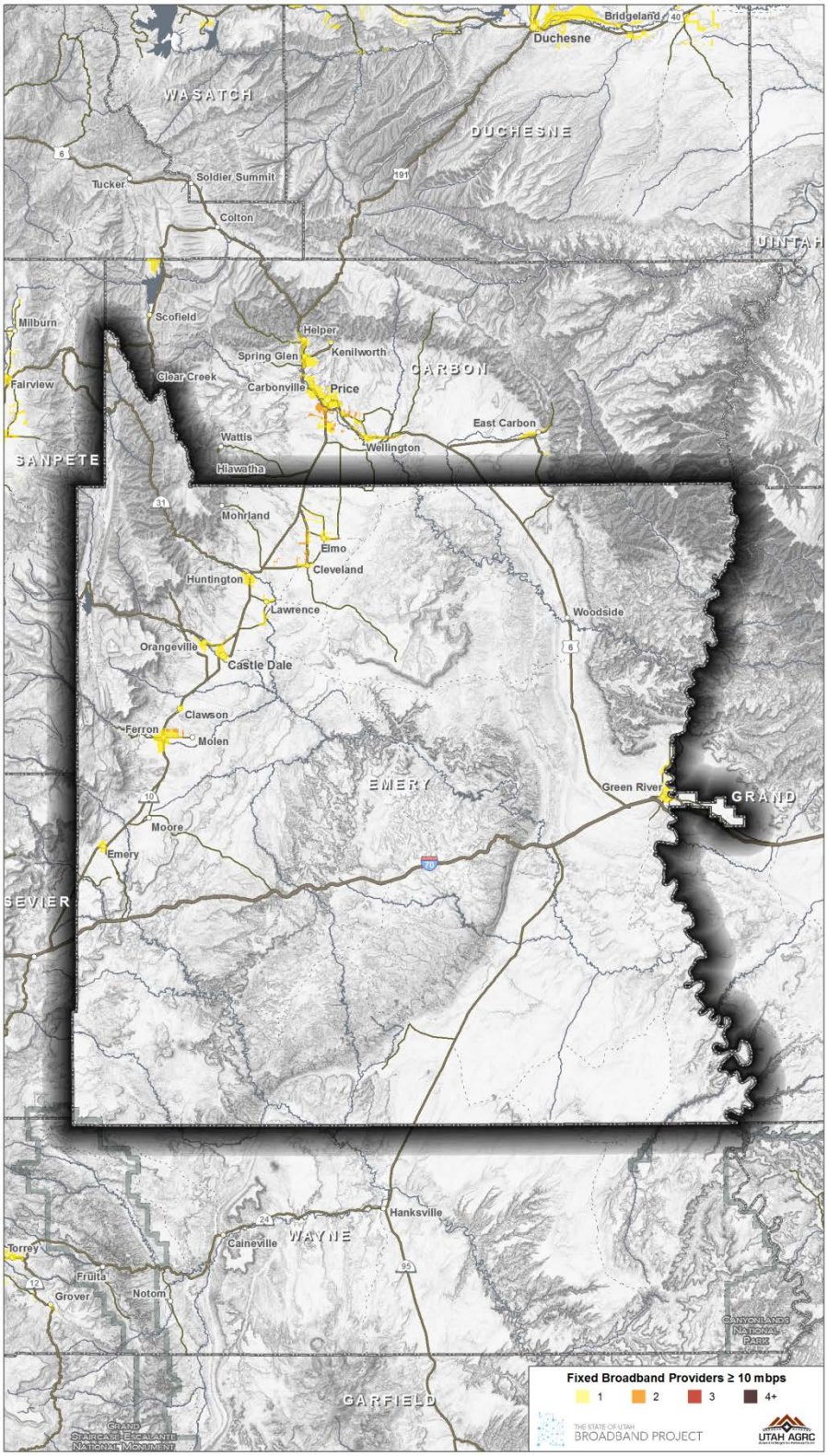


Map 8.4: San Jan County Fixed Broadband Providers Speeds at 3 Mbps or Higher

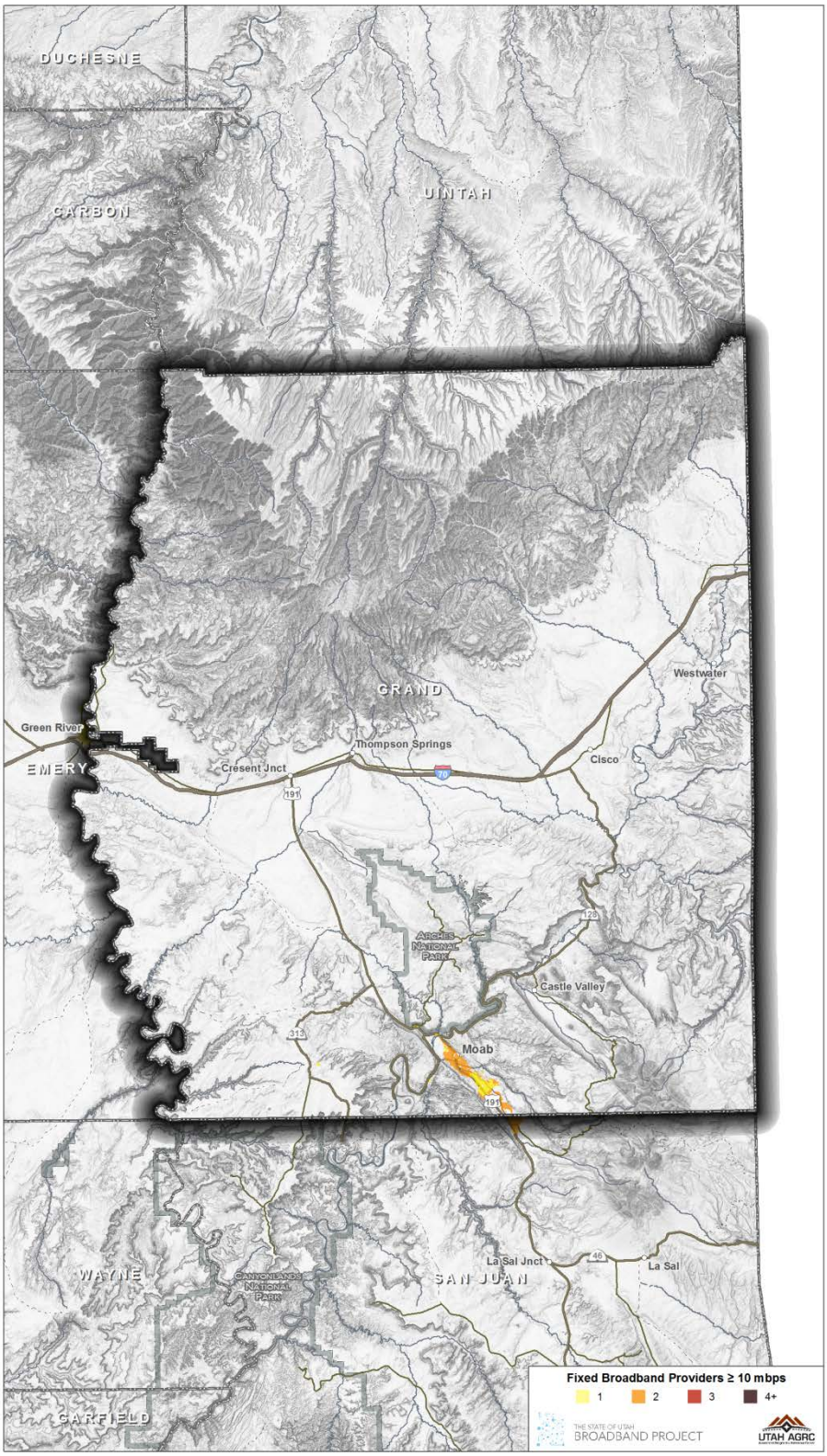


Map 9.1: Carbon County Fixed Broadband Providers Speeds at 10 Mbps or Higher

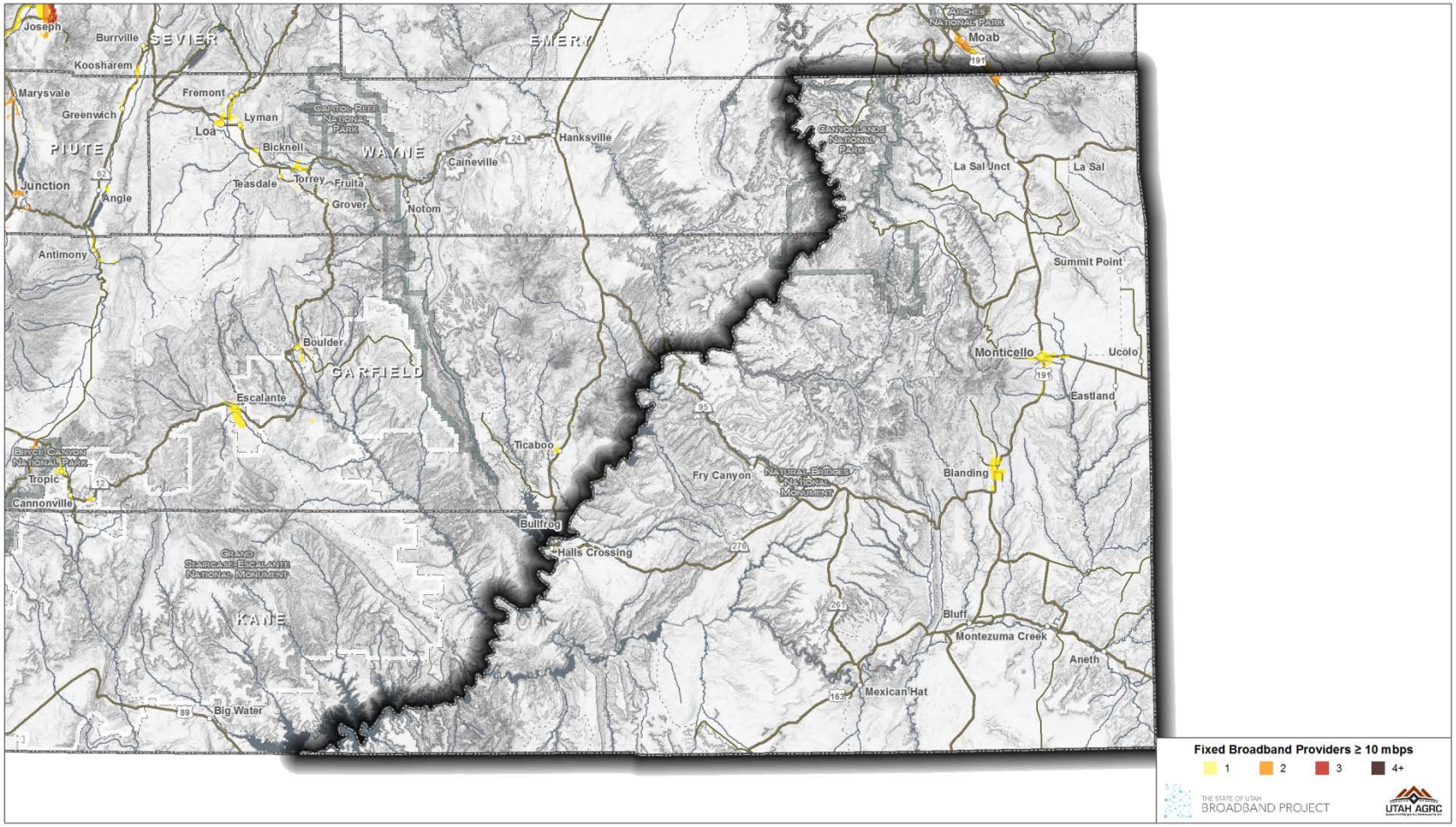
Map 9.2: Emery County Fixed Broadband Providers Speeds at 10 Mbps or Higher



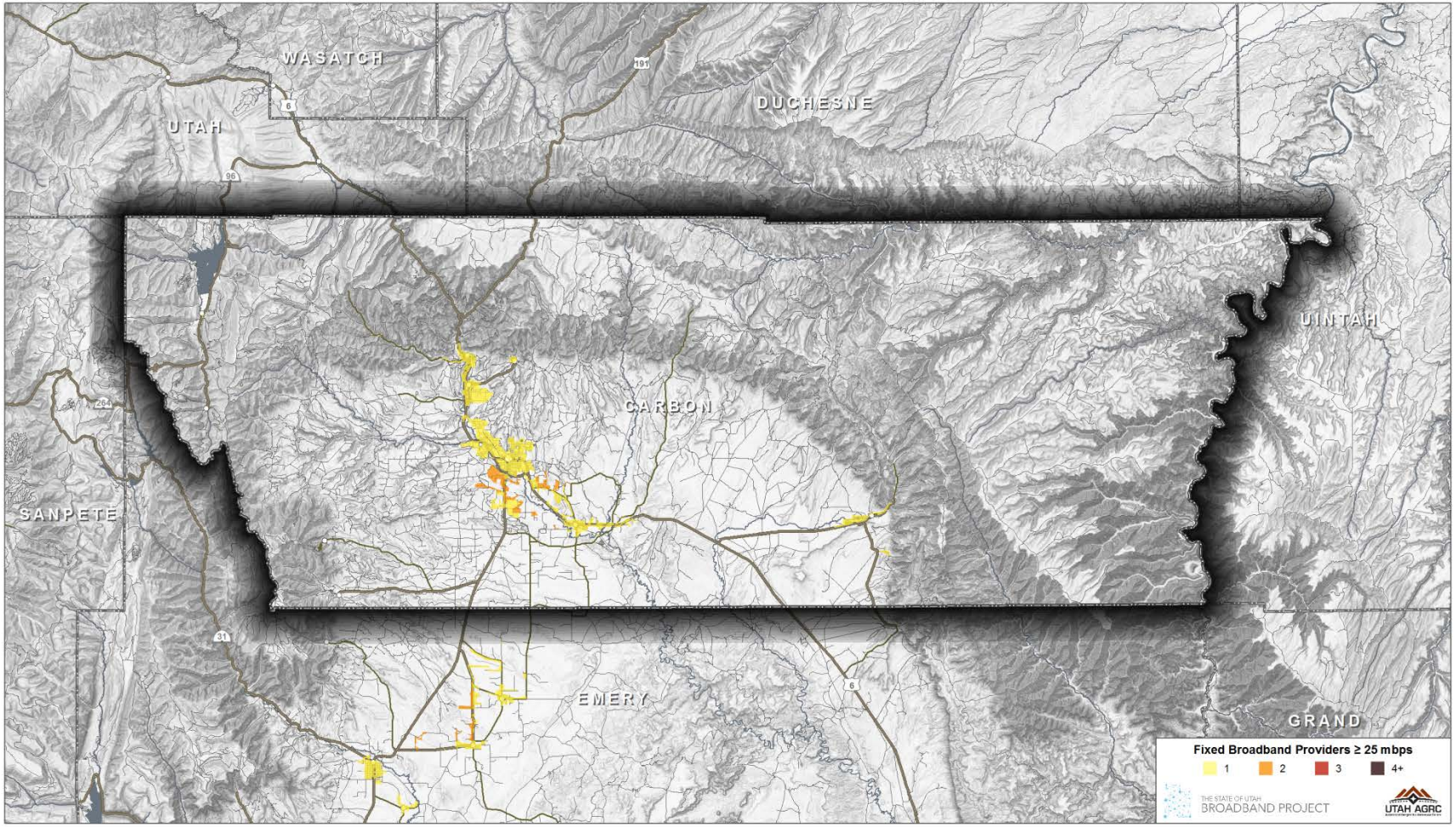
Map 9.3: Grand County Fixed Broadband Providers Speeds at 10 Mbps or Higher



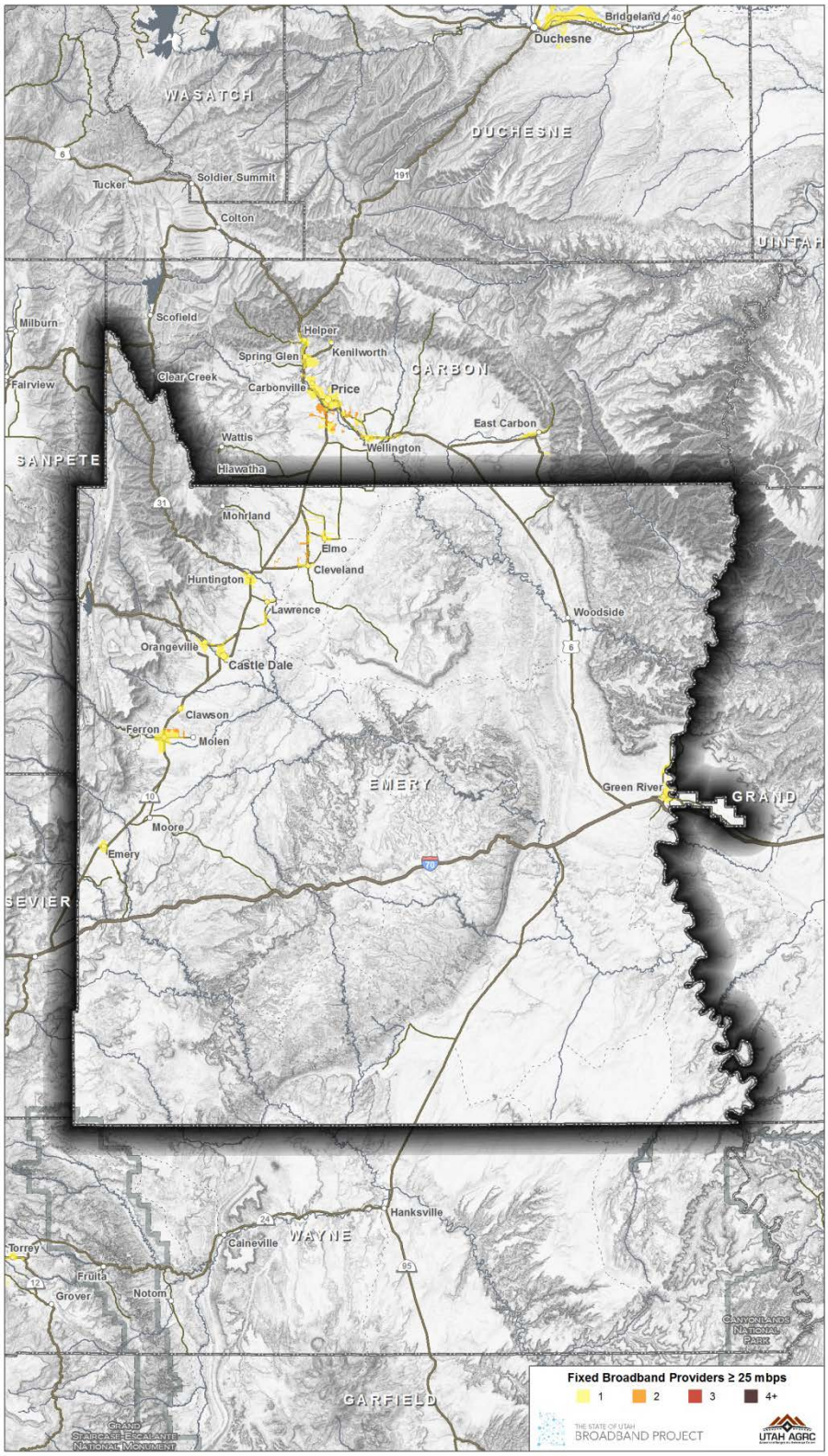
Map 9.4: San Jan County Fixed Broadband Providers Speeds at 10 Mbps or Higher



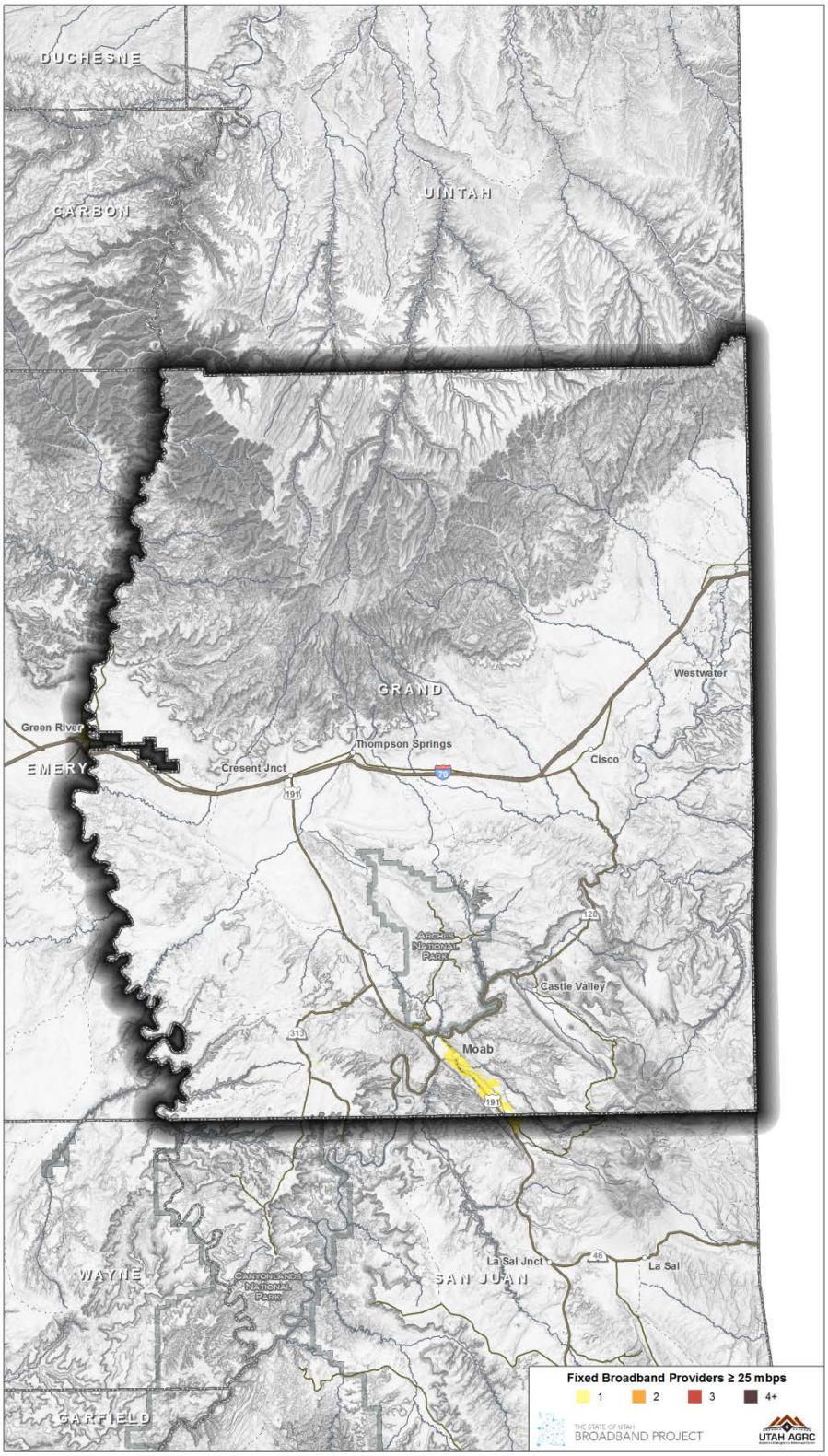
Map 10.1: Carbon Fixed Broadband Providers Speeds at 25 Mbps or Higher



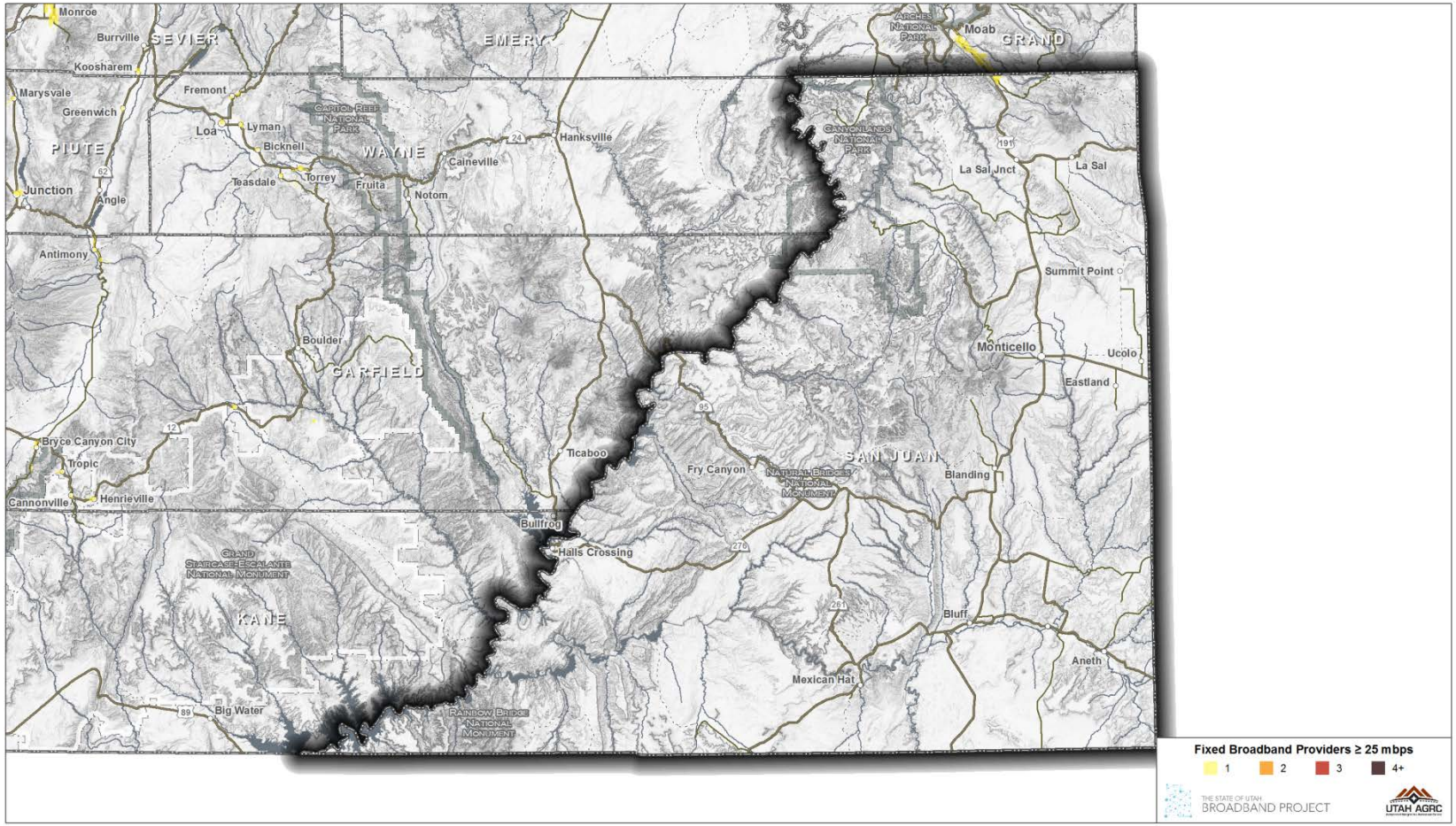
Map 10.2: Emery County Fixed Broadband Providers Speeds at 25 Mbps or Higher



Map 10.3: Grand County Fixed Broadband Providers Speeds at 25 Mbps or Higher



Map 10.4: San Juan County Fixed Broadband Providers Speeds at 25 Mbps or Higher



Appendix B: Planning Material

List of Discussion Meetings

When	Where	Topic/Who
August 12, 2013	Moab	Initial Workshop
August 14, 2013	Price	Initial Workshop
August 22, 2013	Bluff	Initial Workshop
October 10, 2013	Castle Dale	Initial Workshop
October 24, 2013	Provo	Utah Broadband Tech Summit
November 6, 2013	San Juan County Administrator Assistant	Broadband initiative & needs assessment
November 6, 2013	Bluff	Broadband initiative with Navajo IT, Utah Trust lands, and business group
November 7, 2013	White Mesa	Broadband Initiative and Needs Assessment with Ute Mountain Ute Tribe community and educational staff
November 7, 2013	Blanding	Broadband Initiative and Needs Assessment with Blanding City Administration
November 7, 2013	Monticello	Broadband Initiative and Needs Assessment with Monticello City Administration, Mayor, and SJC Economic Development dept.
November 19, 2013	Moab	Broadband Planning Council Meeting: participants met in person.
February 6, 2014	Price	Broadband Planning Council Meeting: participants met in person or conferenced in.

Outreach Correspondence

Initial Letter (sent via postal mail and electronic mail)

****

July 15, 2013

Dear Future Broadband Council Member,

In an effort to provide awareness and to collaborate in community planning, you are receiving this invitation as a request for your participation on the Regional Broadband Planning Council. Healthcare personal are essential in planning for technology that comes from broadband. Come learn or brush up on what the Broadband Project is all about! Your input is needed for this council to succeed.
Below are some details about the initiative. Let me know your interest by Friday, July 26, 2013. If you have any questions, please contact me!

The Broadband Planning Council should have representation from the following areas:
County and Local Government Officials
Economic Development
Energy
Extension offices/agriculture
Health Care
Libraries
Public Safety
Broadband providers
Business leaders
Education
Tribal leaders
Transportation
Why:

The Utah Broadband Project [http://business.utah.gov/programs/broadband/] has formed a partnership with the Association of Governments throughout the state to promote the Regional Broadband Planning Council initiative. The Council is vital to the communities in the region to identifying key issues with current and future broadband planning.
This Council is being organized through AOGs to address broadband planning on a local level. The Council's purpose is to engage civic leaders to plan for increased broadband deployment and use broadband-enabled technologies. Civic leaders will be able to make data-driven decisions to enable better planning for current and future needs.
Mission: To advance the availability of broadband services and infrastructure, and to enhance broadband usage and demand in your region.
Goals: Through the initiative of forming the Regional Broadband Planning Councils; they will identify regional issues, priorities, and goals related to broadband deployment and adoption; participate in the regional and state broadband outreach; and create community awareness about broadband-related issues.

Your participation at Regional Meetings:

1. *Initial Workshop [Pick one near you-- Price, Castledale, Moab, Blanding, Montezuma Creek]*
    a. *Introduction and use of Broadband Planning Councils Toolkit*
    b. *Identify key issues*
    c. *Develop measurable milestones to explore key issues*

2. *2nd Regional Meeting*
    a. *Regional needs assessment.*
    b. *Engage in session ideas and content for UT Broadband Summit*
    c. *Register participants for UT Broadband Summit*

****We will hold our first set of meetings during mid-August and our second set during October/November time-frame.*
Participation:
Your response to this invitation is vital to community involvement and regional planning initiatives. We strive to gain awareness, identify issues, and establish goals through the collaboration with community members to meet the future needs of our citizens and businesses.
On behalf of the Utah Broadband Project and Association of Governments, thank you in advance for your prompt response and future participation.

Outreach Letter went to Moab, Monticello, and Blanding Chamber of Commerce

Southeastern Utah Region Broadband Planning Council Workshop/Meetings

Why:
The Utah Broadband Project [http://business.utah.gov/programs/broadband/] has formed a partnership with the Association of Governments throughout the state to promote the Regional Broadband Planning Council initiative. The Council is vital to the communities in the region to identifying key issues with current and future broadband planning.
Mission: To advance the availability of broadband services and infrastructure, and to enhance broadband usage and demand in your region.
Goals: Through the initiative of forming the Regional Broadband Planning Councils; they will identify regional issues, priorities, and goals related to broadband deployment and adoption; participate in the regional and state broadband outreach; and create community awareness about broadband-related issues.
Initial Workshops:

- **Moab – August 12 at 9:30AM (Moab Regional Hospital)**
- **Price – August 14th at 9AM (Southeastern ALG Building)**
- **Bluff– August 22 at 1PM (Bluff Fire Station)**
- **Castle Dale – mid September Please call for details**

Contact information for southeastern Utah region:

Amy Peters
Planning Coordinator for the Southeastern Utah Association of Local Governments,
375 South Carbon Ave, P.O. Box 1106 Price, Utah 84501
Office: 435-637-5444 Ext 404 E-mail: apeters@seualg.utah.gov Web: http://seualg.utah.gov

Broadband Planning Councils Workshop AGENDA

1. Introductions
2. Broadband Planning Councils Toolkit
    a. Identify key issues
    b. 10 minute break
    c. Develop measurable milestones
3. Announcements and Closure

Notice sent to Broadband Planning Council and State Public Announcement Website

Broadband Planning Council Meeting

1. Will be held on Tuesday, November 19th at 10:30AM
2. Location: Moab Regional Hospital
3. Agenda: Ensure measurable milestones are in place for key issues, support needs assessment, awareness of Regional Broadband Plan, network and awareness of broadband services.

CONTACT INFORMATION FOR SOUTHEASTERN UTAH REGION

Amy Peters, *Planning Coordinator for the Southeastern Utah Association of Local Governments*,
375 South Carbon Ave, P.O. Box 1106 Price, UT 84501
Office: 435-637-5444 Ext 404 E-mail: apeters@seualg.utah.gov Web: http://seualg.utah.gov

Southeastern Utah Association of Local Governments does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, political affiliation or belief in its programs or activities. In compliance with the Americans with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and services) during this meeting should notify Amy Peters at 375 S. Carbon Ave, Price, UT, 435 637-5444 at least three working days prior to the meeting.

Meeting Agenda for November 19, 2013

Southeastern Broadband Planning Council (SEBPC) Meeting
Tuesday, November 19, 2013
Moab Regional Hospital, 10:30AM

1. Welcome
    a. Introductions
    b. Sign-In
2. Key Issues---Priority Area
    a. Review
    b. Add
    c. Rank…. Rank Again by sector or county/city
3. Milestones---Action Plan Development
    a. Review & Add
    b. Put your money where your idea is!
    c. Conclude recommended activities
4. Needs Assessment Survey
    a. Outreach/collection
5. Final Plan input
    a. What type of Map data could your community/organization utilize when planning?
6. BPC Input, questions, concerns… when do we meet again?
    a. Input, Questions, Concerns
    b. Meeting again?
        i. Group or separate by area?
7. Adjourn

The announcement below was sent out electronically to the BPC, News Papers, State Public Announcement website, SEUALG agency staff and electronic mailing lists.

SE Broadband Needs Assessment Survey

Welcome to the Broadband Needs Assessment Survey. This survey is being conducted by the Southeastern Utah Association of Local Government Broadband Planning Council in partnership with the Utah Governor's Office of Economic Development. We are requesting participation from persons residing in Carbon, Emery, Grand, and San Juan Counties to provide answers on this Survey.

This survey is being conducted through Monday, December 16, 2013. If you have questions, please contact: Amy Peters, Planning Coordinator at Southeastern Utah Association of Local Governments. apeters@seualg.utah.gov, 375 South Carbon Ave, Price, Utah 84501, and 435-637-5444.

Your participation is voluntary. No one, including the researcher, will be able to associate your responses with your identity. There is minimal risk in participating in this study. Researchers hope to analyze the market data concerning use and demand for high speed Internet service. You must be at least 18 years of age to participate in this study. Your completion of the survey serves as your voluntary agreement to participate in this research project and your certification that you are 18 or older.

Please access the survey on-line at:

https://www.surveymonkey.com/s/SEBroadband

Letter sent to participants in San Juan County area on Survey

November 22, 2013

Dear Broadband Planning Council Member,

Enclosed you will find 50 copies of the residential survey for the Broadband Needs Assessment Survey Project.

Please place these survey's where individuals in your community may participate. The data that is collected will help provide a better understanding as to where broadband internet services are needed in the State of Utah.

Please begin distributing and collecting the survey's today through December 16, 2013. Enclosed is an extra envelope for you to mail the completed surveys back to my office at the end of the survey period.

Your commitment to this endeavor is appreciated! If you have any concerns or questions, please contact me.

Best regards,

Amy L. Peters

Planning Coordinator
435-637-5444 ext. 404
apeters@seualg.utah.gov

Workshop Materials

PowerPoint used during the Initial Workshops (five pages)

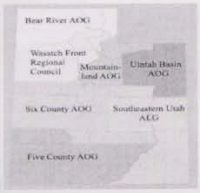
3/27/2014

*Welcome to the Broadband Planning Council's Workshop

Instruction by Amy L. Peters
Planning Coordinator
for the Southeastern Utah Association of Local Governments

*AGENDA

- Welcome, Introductions and Logistics
- Broadband Planning Councils Toolkit
  - Purpose
  - Broadband 101
    - 10-15 minute break
    - SWOC (Identify key issues)
    - 5 minute break
  - What's Next… Outreach & Connection
- Announcements and Closure



The Utah Broadband Project Is Currently Launching A Regional Broadband Planning Council Initiative!

*Forming Councils

*Mission: To advance the availability of broadband services and infrastructure, and to enhance broadband usage and demand in your region.

*Goals: Regional Broadband Planning Councils (BPCs) will identify regional issues, priorities, and goals related to broadband deployment and adoption; participate in the regional and state broadband outreach; and create community awareness about broadband-related issues.

Toolkit p. 3

*Purpose

*Initial workshop and meetings – Aug & Sep
*Conduct a needs assessment – Nov/Dec
*Statewide Broadband Summit – Oct 24th

*Draft plan due – March 2014
*Present Regional Broadband Plan – Jun '14

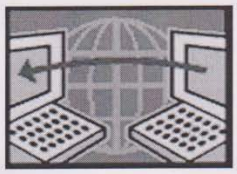
*Time-line

*Message from our Governor

"I am excited to support the Utah Broadband Project, which is important because it will provide a clear map to assess the unserved and underserved areas in the State. This is yet another milestone in a series of milestones to strengthen economic development opportunities in Utah, not only in our rural areas, but across the entire State."

Toolkit p. 7

1



*Broadband 101

*An Internet connection that is faster than traditional dial-up Internet access.

*Currently defined as an Internet connection that moves data at speeds of 768 Kilobits per second (Kbps) downstream and 200 Kbps upstream.

*What is Broadband?

Toolkit p. 11

Broadband	Dial-up Service
Always on	Must dial in
Less delay when downloading or sending files	Wait time, buffering interruptions
More content (≥768 Kbps)	Less content
Provides access to the highest quality Internet services—video, streaming media, VoIP (Internet phone), online business applications and interactive services.	Low quality or limited to no applicable services.

Toolkit p. 11

*Broadband vs. Dial-up Service

*Economic Development
*Education
*Healthcare
*Agriculture
*Employment/job training
*Entrepreneurship
*Communication/outreach/family connection

*Day-to-Day Lives

Pages 12-13 of our BPC Toolkit!

Getting familiar with terms is essential to our core understanding and application of our knowledge.

*Broadband Definitions

*Take 2 minutes to review the the terms located on pages 12-13.

*Pick two terms that stand out to you...prepare to share one of the terms with the group.

*Term Knowledge Activity

2

*Speed Chart:
- Download speeds
- Upload speeds
- Typical Service
- Typical Application

*Basic Functions Chart
- Light Use
- Moderate Use
- High Use

*Speed Comparison Reference Table:
(bits of information per second)

- Kbps = 1,000 (thousand)
- Mbps = 1,000,000 (million)
- Gbps = 1,000,000,000 (billion)

*Why Broadband Speed Matters!

Toolkit p. 14-15

*Consumer BB Availability by Speed
*Utah BB Coverage & Population
*Highest BB Service Level for Housing Units
*Basic Consumer BB
*Home Office Education BB
*High Capacity BB
*Highest Known Speed and BB market Challenges
*Mobile BB Network Speeds
*BB Adoption Survey 2011

*Broadband Maps and Data

Toolkit p. 16-31

*Utah Broadband Access

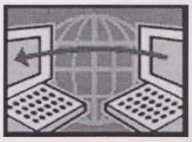
*Utah Broadband Advisory Council
- *Report June 19, 2012: details the programs and organizations that have made Utah a leader in BB adoption and deployment and highlights the recommendations made by the Council to continue coordinating efforts to expand BB access and use

*Survey Data

Toolkit p. 25-31

*Broadband Providers Serving Utah

Toolkit p. 32



*Break...refreshment time

*INPUT ACTIVITY☺

LET'S GET STARTED...

*S = Strengths; broadband-related systems, practices, processes, and resources that are highly valued by stakeholders

*W = Weakness; areas that need improvement, reasons why stakeholders are not able to embrace broadband and areas that tend to compromise the achievement of availability and adoption.

*O= Opportunities; situations not yet taken advantage of, developments and technologies no currently in place

*C = Challenges; situations that may negatively impact broadband development & acceptance perceived by stakeholders.

*SWOC analysis

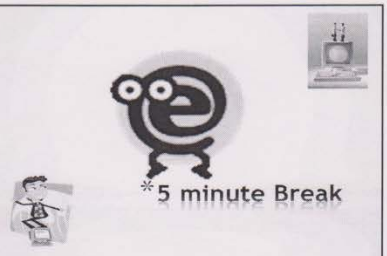
*Step 1: ID Potential Priority Areas Worksheet

Instructions: SWOC each sector that may be impacted by broadband

*Step 2: ID Key Priorities Worksheet

*Instructions:

1. Identify several key priority areas you would like to focus upon.
2. describe a clear vision of what you would like your community/region to become in 3-5 years.



*5 minute Break

*Step 3: Priority Area & Action Plan Development Worksheet

*Instructions:

For each priority area in Step 2, *utilize the identified SWOC* from Step 1...list recommended activities that will help develop an action plan to address these priorities.

*Outreach!

*What's next?

*Information Materials
*Events
*Online
*Print, Broadcast, and Online Media
*Presentations

*Outreach Activity
Options and Ideas

Toolkit p 95

*Who
*What
*When
*Where

*Assignments

1. Connection with others Sep/Oct (p. 76-91)
   - Survey
   - Public Press Releases
   - Group discussions
   - Presentation
   - Postings
2. Input: E-mail and Conference Call Participation (Sep/Oct)
3. Register/Attend Broadband Summit (October 24)
4. Strategic Direction Meeting (Nov 19th)
5. Regional Broadband Plan (March-June)

*In a Nut Shell

The Utah Broadband Project Website:
http://broadband.utah.gov/
Regional BB Planning Councils Section
http://broadband.utah.gov/resources/regional-planning/
Interactive Broadband Map
http://broadband.utah.gov/map/
Broadband Speed Test
http://utah.gov/broadbandspeedtest/address.html?type=test
BB Impacts on Regional Sectors Fact Sheets (p.39-62)

*Project Resources

Toolkit p.35-62

Worksheets used during the Initial Workshop and follow-up meetings

Broadband Workshop Worksheets

Introduction page to ***Strengths, Weaknesses, Opportunities and Challenges (SWOC) Analysis***

SWOC Understanding:

Before undertaking the SWOC analysis, it is important to understand the elements that create the analysis. 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. For example, the Regional Broadband Planning Councils may identify areas of strength related to broadband such as the level of coverage throughout the region, high levels of bandwidth or speed, high numbers of providers competing in the region and cost parameters that are highly valued by residential, business and institutional users of broadband.

- **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. These may include proximity of broadband providers' infrastructure to areas where broadband does not exist today. Technologies or best practices not currently in place may also provide an opportunity for broadband expansion in the region.

- **Challenges** – Present and future situations/circumstances that may negatively impact broadband development and acceptance as perceived by regional stakeholders. This may include density, cost, geographic, socio-economic and computer/Internet literacy issues facing broadband providers and existing and potential users.

Strategic Development:

Regional broadband planning should include a significant review and evaluation of the existing and potential broadband environment, including needs and contributing factors. A critical part of an effective evaluation is a Strengths, Weaknesses, Opportunity and Challenges (SWOC) analysis. A SWOC analysis is a strategic planning exercise that is, in this case, designed to help identify broadband availability and adoption issues that will be considered high priority for the development of strategic directions and initiatives. Once identified, the goal is to develop strategic directions and initiatives that:

- Take full advantage of and leverage the identified strengths
- Improve on weaknesses that are determined
- Seize the opportunities that are identified
- Address the challenges that have been delineated

Step 1: Identify Potential Priority Areas

This worksheet provides a list of common sectors that may be impacted by broadband availability and adoption. The list provides a starting point to help Regional Broadband Planning Teams identify the strengths, weaknesses, opportunities and challenges in each sector within their communities. The list is not comprehensive and Councils are encouraged to add additional sectors that may be important in their regions.

Step 2: Identify Key Priorities

During this step, refer to the first worksheet and identify which of the priority areas you would like to focus on. For each priority area listed, write a brief vision statement that outlines what you would like your community/region to become in three to five years as a result of the regional plan. The worksheet contains space for five priority areas, but you may choose additional priority areas if needed.

Step 3: Priority Area and Action Plan Development

During this step, take each key priority area identified in Step 2 and list the strengths, weaknesses, opportunities and challenges listed in Step 1. Then create a list of recommended activities that will utilize the strengths and opportunities listed, as well as address any weaknesses and challenges that were identified.

Note: The Regional Broadband Planning Council members may pursue the SWOC analysis again at their second large group meeting. The SWOC analysis will help provide a solid basis for improving the broadband landscape going forward. For instance, areas of strength may be built upon and opportunities may be pursued to address areas of weakness and the challenges noted. In addition, this process will help focus the Regional Broadband Planning Councils efforts by providing the basis for prioritization of tasks going forward.

Step 1: Identifying Potential Priority Areas Worksheet

This worksheet is designed to provide a list of common sectors that may be impacted by broadband availability and adoption. For each sector, identify the strengths, weaknesses, opportunities and challenges that exist within your community.

Priority Area	Strengths	Weaknesses	Challenges	Opportunities
Telecommunications Infrastructure				
Broadband Adoption/Digital Literacy Training				
Local Governments				
Public Computing Centers/Wi-Fi Access				
Education				
Libraries				
Economic Development/Business Needs				
Public Safety				
Healthcare				
Transportation				
Rural Broadband Access				
Tribal Broadband Access				
Other				

Step 2: Identifying Key Priorities Worksheet

Base on the analysis conducted in Step 1; identify several key priority areas your Regional Broadband Planning Council would like to focus on. Describe a clear vision of what you would like your community/region to become in three to five years as a result of the regional plan.

Example *Priority Area: Local Governments*
Vision: Work with local governments in the _____County Association of Governments region to ensure that all cities and counties in the region have municipal websites within the next two year.

Priority Area 1:

Priority Area 2:

Priority Area 3:

Priority Area 4:

Priority Area 5:

Step 3: Priority Area and Action Plan Development Worksheet
This worksheet is designed to help Regional Broadband Planning councils to focus on each priority area that has been identified. For each priority area, Council members will utilize the Strengths, Weaknesses, Opportunities, and Challenges that were identified previously and list recommended activities that will help develop an action plan to address these five priorities.

SWOC for Priority Area _____:

Strengths	Weaknesses	Challenges	Opportunities

Recommended Activities for Priority Area _____:

1.
2.
3.
4.
5.

Needs Assessment Survey

SE Broadband Needs Assessment Survey

Welcome to the Broadband Needs Assessment Survey. This survey is being conducted by the Southeastern Utah Association of Local Government Broadband Planning Council in partnership with the Utah Governor's Office of Economic Development. We are requesting participation from persons residing in Carbon, Emery, Grand, and San Juan Counties to provide answers on this Survey.

This survey is being conducted through Monday, December 16, 2013. If you have questions, please contact: Amy Peters, Planning Coordinator at Southeastern Utah Association of Local Governments, 375 South Carbon Ave, Price, Utah 84501, and 435-637-5444.

Your participation is voluntary. No one, including the researcher, will be able to associate your responses with your identity. There is minimal risk in participating in this study. Researchers hope to analyze the market data concerning use and demand for high speed Internet service. You must be at least 18 years of age to participate in this study. Your completion of the survey serves as your voluntary agreement to participate in this research project and your certification that you are 18 or older.

You may access the survey on-line at the Website:
https://www.surveymonkey.com/s/SEBroadband
Or fill out the survey below and return it to the contact address.

SE Broadband Needs Assessment Survey

(Please circle your answer)

1. In what **ZIP** code is your home located? (enter 5-digit zip code; for example 13568 or 87652) _____

2. At home, do you or any member of your household own or use any of the following computers? *(mark all that apply)*

a. A desktop computer
b. A laptop or netbook computer
c. A handheld computer or smart phone
d. Do not own a computer

3. Does anyone in your household use the Internet from home or send and receive email from home?

a. Yes
b. No

4. What is the main reason you do not have Internet access in your home?

a. Don't need it, not interested
b. Too expensive
c. Can use it somewhere else
d. Not available in my area
e. No computer or inadequate computer
f. Other (please specify) _____

5. Do you or any member of your household access the Internet at any of the following locations outside the home? *(mark all that apply)*

a. Work
b. School
c. Public library
d. Community center
e. Wi-Fi of a business or organization
f. Someone else's home
g. Do not access the Internet outside the home
h. Another place outside the home (please specify) _____

6. About how often do you access the Internet?

a. Several times a day
b. About once a day
c. 3-5 days a week
d. 1-2 days a week
e. Every few weeks
f. Less than once a month
g. Do not access the Internet/No interest

7. At home, which type of service is used most often when accessing the Internet?

a. Dial-up service
b. DSL service
c. Cable modem service
d. Fiber optic service
e. Cell phone service
f. Satellite service
g. Commercial wireless Internet service
h. Do not access Internet service from my home
i. Some other device (please specify) _____

8. What is the main reason you do not have high speed (faster than dial-up) Internet access at home?

a. High speed Internet is accessible at my home
b. Don't need it, not interested
c. Not available in my area
d. Available in area but too expensive
e. Available in area, but too unreliable
f. Available in area, but too expensive and unreliable
g. Can access it from somewhere else
h. Computer is inadequate
i. Other (please specify) _____

9. Are you White, Black or African-American, American Indian or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, or some other race?

a. White
b. Black or African-American
c. American Indian or Alaskan Native
d. Asian
e. Native Hawaiian or other Pacific Islander
f. From Multiple races
g. Other (please specify) _____

10. What is your age?

a. 18-24
b. 25-34
c. 35-44
d. 45-54
e. 55-64
f. 65-74
g. 75 or older

Thank you!

Thank you for your time to answer these questions. Contact address: Return the completed survey by dropping it off at the main office of SEUALG on 375 South Carbon Ave OR Mail to P.O. Box 1106 Attn: Amy Peters Price, Utah 84501 OR Fax to 435-637-5448.

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Appendix C. Common Broadband Terms and Abbreviations

The following is a list of broadband related words, definitions, and abbreviations. The source of the glossary and common abbreviations are taken from the National Broadband Plan. The links associated are as follows:

National Broadband Plan (Appendices B and C) (http://www.broadband.gov/download-plan/)

Omnibus Broadband Initiative Technical Paper Series No. 1 – List of Common Abbreviations and Glossary (http://www.broadband.gov/plan/broadband-working-reports-technical-papers.html)

Broadband Terminology

4G – Abbreviation for fourth-generation wireless, the stage of broadband mobile communications that will supersede the third generation (3G). Specifies a mobile broadband standard offering both mobility and very high bandwidth. Usually refers to LTE and WiMax technology.

Access Network – Combination of Last and Second Mile portions of a broadband network. See Last Mile and Second Mile.

Actual Speed – Refers to the data throughput delivered between the network interface unit (NIU) located at the end-user's premises and the service provider Internet gateway that is the shortest administrative distance from that NIU.

Asymmetric Digital Subscriber Line (ADSL) – A technology that transmits a data signal over twisted-pair copper, often over facilities deployed originally to provide voice telephony. Downstream rates are higher than upstream rates—i.e., are asymmetric. ADSL technology enables data transmission over existing copper wiring at data rates several hundred times faster than analog modems using an ANSI standard.

Broadband – According to the FCC, the term broadband commonly refers to Internet access that is always and faster than traditional dial-up access. For the purposes of Utah's broadband mapping and planning projects, the term broadband denotes high-speed Internet access equal to or above speeds of 768 kbps downstream and 200 kbps upstream.

Brownfield - A network in which a carrier already has infrastructure in the area that can be used to deliver service going forward.

Burst Rate – The maximum rate or "speed" which a network is capable of delivering within a short timeframe, typically seconds or minutes. This is usually expressed as a rate in Mbps.

CableCARD – A credit card-sized device that contains the video provider's security information. When this card is plugged into a set-top box, it enables customers to access the video programming and services to which they have subscribed.

Capacity – Ability of telecommunications infrastructure to carry information. The measurement unit depends on the facility. A data line's capacity might be measured in bits per second, while the capacity of a piece of equipment might be measured in numbers of ports.

Carrier of last resort – The carrier that commits (or is required by law) to provide service to any customer in a service area that requests it, even if serving that customer would not be economically viable at prevailing rates.

Census Block- The smallest level of geography designated by the U.S. Census Bureau, which may approximate actual city street blocks in urban areas. In rural districts, census blocks may span larger geographical areas to cover a more dispersed population.

Census tract – A small, relatively permanent statistical subdivision of a county, designed to contain roughly 1,000 to 8,000 people who are relatively homogeneous with respect to their demographics, economic status and living conditions.

Central Office (CO) – A telephone company facility in a locality to which subscriber home and business lines are connected on what is called a local loop. The central office has switching equipment that can switch calls locally or to long-distance carrier phone offices. In other countries, the term public exchange is often used.
Churn – The number of subscribers who leave a service provider over a given period of time, usually expressed as a percentage of total customers.

Code-Division Multiple Access (CDMA) – Any of several protocols used in so-called second-generation (2G) and third-generation (3G) wireless communications. As the term implies, CDMA is a form of multiplexing, which allows numerous signals to occupy a single transmission channel, optimizing the use of available bandwidth. The technology is used in ultra-high-frequency (UHF) cellular telephone systems in the 800-MHz and 1.9-GHz bands.

Commercial Mobile Alert System – A system established by the Federal Communications Commission that allows wireless service providers choosing to participate to send emergency alerts as text messages to their subscribers.

Commercial Mobile Radio Service – A mobile communications service that is provided for profit and makes interconnected service available to the public, usually in the form of mobile phone service.
Common carrier – A telecommunications provider, such as a telephone company, that offers its services for a fee to the public indiscriminately.

Competitive Access Provider (CAP) – Facilities-based competitive local exchange carriers (CLECs).

Competitive Local Exchange Carrier (CLEC) - The term and concept coined by the Telecommunications Act of 1996 for any new local phone company that was formed to compete with the ILEC (Incumbent Local Exchange Carrier). A company that offers local telephone service in competition with the legacy telephone company.

Coverage – In wireless communications, refers to the geographic area in which one can obtain service.

Customer Premises Equipment (CPE) - Equipment which resides on the customer's premise. Examples include set top boxes, cable modems, wireless routers, optical network terminals, integrated access devices, etc.

Dark fiber – A fiber optic cable that is laid and ready for use, but for which the service provider has not provided modulating electronics; usually contrasted to lit fiber, which is fiber optic cable in use to provide wired communications.

Data Over Cable Service Interface Specification (DOCSIS) – A cable modem standard from the CableLabs research consortium (www.cablelabs.com), which provides equipment certification for interoperability. DOCSIS supports IP traffic (Internet traffic) over digital cable TV channels, and most cable modems are DOCSIS compliant. Some cable companies are currently deploying third-generation (DOCSIS 3.0) equipment. Originally formed by four major cable operators and managed by Multimedia Cable Network System, the project was later turned over to CableLabs.

Digital signal 1 (DS-1) – Also known as T1; a T-carrier signaling scheme devised by Bell Labs. DS-1 is a widely used standard in telecommunications in North America and Japan to transmit voice and data between devices.

DS-1 is the logical bit pattern used over a physical T1 line; however, the terms DS-1 and T1 are often used interchangeably. Carries approximately 1.544 Mbps.

Digital Subscriber Line (DSL) – A generic name for a group of enhanced speed digital services generally provided by telephone service providers. DSL services run on twisted-pair copper wires, which can carry both voice and data signals.

Digital Subscriber Line Access Multiplexer (DSLAM) – Technology that concentrates or aggregates traffic in DSL networks. Located in the central office or in a remote terminal.

Emergency Alert System (EAS) – A national public warning system that requires broadcasters, cable television systems, wireless cable systems, satellite digital audio radio service (SDARS) providers, and direct broadcast satellite (DBS) providers to provide the communications capability to the President to address the American public during a national emergency. The system also may be used by state and local authorities to deliver important emergency information, such as AMBER alerts and weather information targeted to specific areas.

Fast Ethernet (Fast-E) – A network transmission standard that provides a data rate of 100 Mbps.

Fiber to the Node (FTTN) – A high-capacity bandwidth approach that uses both fiber and copper wires. Optical fiber is used from the core of the telco or CATV network to an intelligent node in the neighborhood where copper wire is used for the connection to the end-user, with one node serving perhaps many residences or small businesses. The few 100 meters or so of the local loop from the node to the premises generally is either unshielded twisted pair (UTP) in a telco application or coaxial cable (coax) in an HFC application, although some form of wireless technology is also possible. Known as Fiber to the Neighborhood, or Fiber to the Cabinet (FTTCab), as well.

Fiber-to-the-Premise (FTTP) – A fiber-deployment architecture in which optical fiber extends all the way to the customer's premise. Also known as Fiber to the Home (FTTH) or Fiber to the Building (FTTB). Typically using PON for residential deployments.

Fixed Wireless (FW) – Wireless service that uses fixed CPE in addition to (or, possibly, even instead of) mobile portable devices to deliver data services. FW solutions have been deployed as a substitute for wired access technologies. For example, it is being used commercially in the U.S. by Clearwire with WiMAX and Stelera with HSPA, and globally by Telstra with HSPA.

Gateway device – A network device that acts as an entrance to another network and often is used to connect two otherwise incompatible networks.

Gigabit Ethernet (Gig-E) – A network transmission standard that provides a data rate of 1,000 megabits per second.

Greenfield – A network in which a carrier has no infrastructure currently (of that technology), and it needs to be built from scratch.

Housing Units (HU) – Includes a house, an apartment, a mobile home, a group of rooms or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters.

Hybrid Fiber Microwave (HFM) – A network (usually wireless) whereby the backhaul transport elements of the network are a mixture or combination of fiber-optic facilities and wireless microwave transport.

Hybrid Fiber Coaxial (HFC) – Another term for cable systems, which are a combination of fiber (Middle and Second Mile) and coaxial cable (Last Mile).
Incumbent Local Exchange Carrier (ILEC) – The dominant local phone carrier within a geographical area. Section 252 of the Telecommunications Act of 1996 defines Incumbent Local Exchange Carrier as a carrier

that, as of the date of enactment of the Act, provided local exchange service to a specific area; for example, Verizon, Wind-stream and Frontier. In contrast, Competitive Access Providers (CAPs) and competitive local exchange carriers (CLECs) are companies that compete against the ILECs in local service areas.

Independent System Operator (ISO) – An organization that coordinates, controls, and monitors the operation of the electrical power system, either within a single state or across multiple states.

Internet Gateway – The closest peering point between a broadband provider and the public Internet for a given consumer connection.

Internet Service Provider (ISP) – A company that provides a connection to the public Internet, often owning and operating the Last-Mile connection to end-user locations.

Last Mile – Refers generally to the transport and transmission of data communications from the demarcation point between the end user's internal network and the carrier's network at the customer premise to the first point of aggregation in the carrier's network (such as a remote terminal, wireless tower location, or HFC node).

Long-Term Evolution (LTE) – A high performance air interface for cellular mobile communication systems. LTE technology increases the capacity and speed of wireless networks relative to current 3G deployments.

Loop – The connection from the network central office to t customers' premises.

Microwave – Microwave transmission refers to the technique of transmitting information over microwave frequencies, using various integrated wireless technologies. Microwaves are short-wavelength, high-frequency signals that occupy the electromagnetic spectrum 1 GHz to roughly 300 GHz, (typically within ITU Radio Band Signal EHF) though definitions vary. This is above the radio frequency range and below the infrared range.

Microcell – Cell sites with extremely limited, but targeted, coverage. Microcells may provide indoor coverage in skyscrapers or may be placed in fire trucks, police cars and ambulances.

Middle Mile – Refers generally to the transport and transmission of data communications from the central office, cable head-end or wireless switching station to an Internet point of presence.

National Broadband Availability Target – The level of service set in the National Broadband Plan that should be available to every household and business location in the U.S. The initial target is an actual download speed of at least 4 Mbps and an upload speed of at least 1 Mbps, with a proposed review and update every four years.

Next Generation 911 (NG911) – An emergency response system that integrates the core functionalities of the E911 system and also supports multimedia communications (such as texting, e-mail, and video) to the PSAP and to emergency personnel on the ground.

Node – An active or passive element in a cable system where Second-Mile fiber connects with coaxial cable.

Node splitting - In a cable system, adding infrastructure so that subscribers previously served by a single node are moved to multiple nodes, reducing the number of subscribers per node.

Offload – Shifting telecommunications traffic from one network to another to relieve network congestion.

Open source – A software development model by which the source code to a computer program is made available publicly under a license that gives users the right to modify and redistribute the program.

Over-builder – A facilities-based provider of cable service, telecommunications, or broadband that builds in an area already served by another facilities-based provider.

Overlay auction – An auction for licenses to unused portions of the spectrum already assigned to incumbent users.

Passive Optical Network (PON) – A type of Fiber To The Premise (FTTP) network in which unpowered optical splitters are utilized to enable a single fiber to be shared by multiple end users. There are several varieties of PON currently in use in the U.S., including BPON, EPON and GPON, each of which has its own set of standards and capabilities.

Plain Old Telephone Service (POTS) – The basic single line switched access service offered by local exchange carriers to residential and business end users, using loop-start signaling.

Point of Presence (POP) – An access point to the Internet. A point of presence is a physical location that houses servers, routers, switches and aggregation equipment. A location where a communications carrier allows other carriers to access its network.

Point to point (P2P) – A type of fiber to the premise network in which each endpoint is connected to its serving office via a dedicated fiber optic strand.

Public Safety Answering Point (PSAP) - A call center responsible for answering emergency calls and dispatching emergency services.

Public Switched Telephone Network (PSTN) – The worldwide collection of interconnected public telephone networks that was designed primarily for voice traffic. The PSTN is a circuit switched network, in which a dedicated circuit (also referred to as a channel) is established for the duration of a transmission, such as a telephone call. This contrasts with packet switching networks, in which messages are divided into small segments called packets and each packet is sent individually. Packet switching networks were initially designed primarily for data traffic.

Regional Bell Operation Company (RBOC) - Local exchange carriers formed after the breakup of AT&T in 1984. The seven regional holding companies (RHCs) of roughly equal size were formed as a result of the 1982 Consent Decree AT&T signed with the U.S. Department of Justice, stipulating that it would divest itself of its 22 wholly owned telephone operating companies. The seven RHCs were Ameritech, Bell Atlantic, BellSouth, NYNEX, Pacific Telesis, Southwestern Bell and US West. After a series of acquisitions, mergers and name changes (including one in which a combination of several RHCs reclaimed the original AT&T name), only three of the original seven remain. They are AT&T, Qwest and Verizon. The RBOCs are the incumbent local exchange carriers (ILECs) in their local markets.

Remote Terminal - Telephone communications equipment that is installed within the service area or "neighborhood" that traditionally aggregates and multiplexes telephone local loops and transmits the aggregated signals from the service area back to the telephone central office switch. This has evolved to become the "Node" within a service area in a fiber-to-the-node architecture.

Right-of-Way – The right to pass over or occupy a particular piece of land. For example, utilities generally receive right of-way from municipalities to erect and wire poles to carry electricity, telecommunications services, and cable service.

Second Mile – Refers generally to the transport and transmission of data communications from the first point of aggregation (such as a remote terminal, wireless tower location, or HFC node) to the point of connection with the Middle Mile transport.

Set-Top Box – A stand-alone device that receives and decodes programming so that it may be displayed on a television. Set top boxes may be used to receive broadcast, cable, and satellite programming.

Smart Grid – The electric delivery network, from electrical generation to end-use customer, integrated with sensors, software, and two-way communications technologies to improve grid reliability, security, and efficiency.

Smart Meter – A digital meter (typically electric) located on the customer premises that records energy usage and has two-way communications capabilities with utility systems.

Spectrum Allocation – The amount of spectrum dedicated (or allocated) to a specific use; in wireless, spectrum allocation is typically made in paired bands, with one band for upstream and the other for downstream.

Spectrum Band – The frequency of the carrier wave in wireless communications. Radios can transmit on different frequencies in the same area at the same time without interfering; frequency marks the division of different parts of spectrum for different uses. Frequency is measured in Hertz (Hz); the range of frequency typically used for radio communications is between 10,000 (10 kHz) and 30,000,000,000 Hz (30 GHz). Different frequencies have different natural properties: Lower frequencies travel farther and penetrate solids better, while higher frequencies can carry more information (faster data rates, etc.) The best balance of these properties for the purpose of cell phones is in the range of roughly 700-2,500 MHz. A specific range of frequencies allocated for a specific purpose is called a "band."

Take Rate – The ratio of the number of premises that elect to take a service divided by the total number of premises in a market area; effectively a penetration rate of homes passed.

Teletype or Telephone Typewriter – A type of machine that allows people with hearing or speech disabilities to communicate over the phone using a keyboard and a viewing screen.

Time Division Multiple Access (TDMA) – Technology used in digital cellular telephone communication that divides each cellular channel into three time slots in order to increase the amount of data that can be carried. TDMA is used by Digital-American Mobile Phone Service (D-AMPS), Global System for Mobile communications (GSM), and Personal Digital Cellular (PDC). Each of these systems implements TDMA in somewhat different and potentially incompatible ways. An alternative multiplexing scheme to FDMA with TDMA is CDMA (code division multiple access), which takes the entire allocated frequency range for a given service and multiplexes information for all users across the spectrum range at the same time.

Unserved – Those housing units without access to a broadband network capable of offering service that meets the National Broadband Availability Target.

Very high bit rate Digital Subscriber Line (VDSL) **–** A form of DSL similar to ADSL but providing higher speeds at shorter loop lengths.

Voice Over Internet Protocol (VOIP) – A family of transmission technologies for delivery of voice communications over IP networks such as the Internet or other packet-switched networks. Other terms frequently encountered and synonymous with VoIP are IP telephony, Internet telephony, voice over broadband (VoBB), broadband telephony and broadband phone.

Wireless ISP (WISP) – An Internet service provider that provides fixed or mobile wireless services to its customers. Using Wi-Fi or proprietary wireless methods, WISPs provide last mile access, often in rural areas and areas in and around smaller cities and towns. The largest provider of wireless broadband in the U.S. is currently Clear wire Corporation, a WISP that uses an early version of WiMAX to deliver the Internet to customers in the U.S., Ireland, Belgium and Denmark (see WiMAX).

Wireless Priority Service (WPS) – A federal program that authorizes cellular communications service providers to prioritize calls over wireless networks. Participating service providers typically deploy WPS in stages until service is available in most coverage areas and functionality has reached full operating capability.

Wi-Max – Worldwide Interoperability for Microwave Access (WiMAX) is a telecommunications technology that uses radio spectrum to transmit bandwidth between digital devices. Similar to Wi-Fi, WiMAX brings with it the ability to transmit over far greater distances and to handle much more data.

Common Abbreviations

3G Third generation
4G Fourth generation
ADSL Asymmetric Digital Subscriber Line
AGRC Automated Geographic Reference Center (State of Utah)
AMPS Advanced Mobile Phone Service
BDIA Broadband Data Improvement Act
BIP Broadband Infrastructure Program
BPON Broadband Passive Optical Network
BTOP Broadband Technology Opportunities Program
CAP Competitive Access Provider
CDMA Code-Division Multiple Access
CLEC Competitive Local Exchange Carrier
CO Central Office
CPE Customer Premises Equipment
DOCSIS Data Over Cable Service Interface Specification
DS1 Digital Signal 1
DS3 Digital Signal 3
DSL Digital Subscriber Line
DSLAM Digital Subscriber Line Access Multiplexer
DTS Department of Technology Services (State of Utah)
DTV Digital television
E911 Enhanced 911
EAS Emergency Alert System
EPON Ethernet Passive Optical Network
ERIC Emergency Response Interoperability Center
EV-DO Evolution-Data Optimized
FCC Federal Communications Commission
FS-ISAC Financial Services Information Sharing and Analysis Center
FTTN Fiber to the Node or Fiber to the Neighborhood
FTTP Fiber-to-the-Premise
FW Fixed Wireless
Gbps Gigabits per second
GHz Gigahertz (1 billion Hertz)
GIS Geographic Information System
GOED Governor's Office of Economic Development (State of Utah)
GPS Global Positioning System
GSM Global System for Mobile communication
HD High definition
HFC Hybrid Fiber Coaxial
HFM Hybrid Fiber Microwave
HU Housing Units
Hz Hertz
ILEC Incumbent local exchange carrier
IP Internet Protocol
IPAWS Integrated Public Alert and Warning System
ISAC Information Sharing and Analysis Center
ISO Independent System Operator (ISO)
ISP Internet service provider
IT Information technology
IT-ISAC Information Technology Information Sharing and Analysis Center
IXC Interexchange Carrier
kbps Kilobits per second
Kft Kilo-feet (1,000 feet)
kHz Kilohertz (1 thousand Hertz)
kWh Kilowatt-hour LATA Local Access and Transport Area
LEC Local exchange carrier
LTE Long-Term Evolution
Mbps Megabits per second (1 million bits

per second)
MHz Megahertz (1 million Hertz)
MSA Metropolitan service area
MS-ISAC Multi-State Information Sharing and Analysis Center
NBP National Broadband Plan
NG911 Next Generation 911
NIST National Institute of Standards and Technology
NTIA National Telecommunications and Information Administration
NPSBN Nationwide Public Safety Broadband Network
PBS Public Broadcasting Service
PC Personal computer
PDF Portable Document Format
POP Point of Presence
PON Passive Optical Network
POTS Plain Old Telephone Service
PSAP Public safety answering point
PSBL Public Safety Broadband Licensee
PSC Public Service Commission (State of Utah)
PSTN Public Switched Telephone Network
QOS Quality of Service
R&D Research and development
RBOC Regional Bell Operation Company
RSA Rural service area
RUS Rural Utilities Service
SIM Subscriber Identity Module
SLC Subscriber line charge
SMS Short Message Service
TDMA Time Division Multiple Access
Telco Telecommunications
TOP Technology Opportunity Program
TV Television
UEN Utah Educational Network
UHF Ultra high frequency
USF Universal Service Fund
USU Utah State University
VDSL Very high bit rate Digital Subscriber Line
VHF Very high frequency
VOIP Voice Over Internet Protocol
WCS Wireless Communications Service
WiMAX Worldwide Interoperability for Microwave Access
WISP Wireless Internet service provider
WPS Wireless Priority Service

Appendix D: Existing Resources

Public Access to Broadband

The Broadband project coordinators from the Governor's Office of Economic Development (GOED) have compiled a list of public service areas to access the internet. The Public Access Areas are listed as of March 20, 2014; updated lists can be accessed on the broadband website http://broadband.utah.gov/public-wifi-access/ .

Public Access Areas (Governor's Office of Economic Development, 2014)

"Economic development, career training, and advances in education and healthcare rely not only on broadband infrastructure, but also on the knowledge and tools to leverage that infrastructure. The Federal Communications Commission (FCC) determined that graduation rates for students with home broadband access are 6 to 8% higher than students without access. The FCC also noted that 80% of Fortune 500 companies post job opening online only—and require online applications." " The broadband Project has compiled a list of location, throughout the state, where computer access and Wi-Fi are available and free for the public to use."

Blanding

- San Juan County Library – Blanding Branch
  25 West 300 South, Blanding, Utah
  435-678-2335 **Number of Public Computers:** n/a **Public Wi-Fi Access:** No
- Blanding Center – Department of workforce services
  544 North 100 East, Blanding, Utah
  435-678-1400 **Number of Public Computers:** 15 **Public Wi-Fi Access:** Yes
  Available primarily for job searching purposes
- Blanding Senior Center
  177 East 200 North, Blanding, Utah
  435-678-2427 **Number of Public Computers:** 1 **Public Wi-Fi Access:** Yes
  Available primarily for senior citizens

Bluff

- Bluff Senior Center -
  190 North 2nd East, Bluff, Utah
  435-672-2390 **Number of Public Computers:** 1 **Public Wi-Fi Access:** Yes

Castle Dale

- Emery County Library – Castle Dale Branch
  135 North 100 East, Castle Dale, Utah
  435-381-2559 **Number of Public Computers:** 4 **Public Wi-Fi Access:** Yes
- Emery County Center – Department of workforce services
  550 West Highway 29, Castle Dale, Utah
  435-381-6100 **Number of Public Computers:** 4 **Public Wi-Fi Access:** Yes
  Available primarily for job searching purposes
- Emery County Rec Rodeo grounds – Parks and Recreation
  105 South 300 East, Castle Dale, Utah **Public Wi-Fi Access:** Yes
- Castle Dale City Park – Parks and Recreation
  65 East 100 North, Castle Dale, Utah **Public Wi-Fi Access:** Yes
- Emery County Aquatic Center – Parks and Recreation
  240 East 800 North, Castle Dale, Utah **Public Wi-Fi Access:** Yes

Cleveland

- Emery County Library – Cleveland Branch
  45 West Main Street, Cleveland, Utah
  435-653-2204 **Number of Public Computers:** 2 **Public Wi-Fi Access:** Yes
- Cleveland City Park – Parks and Recreation
  245 West Main Street, Cleveland, Utah **Public Wi-Fi Access:** Yes

Emery • Emery County Library – Emery Branch 85 North Center Street, Emery, Utah 435-256-2474 **Number of Public Computers:** 3 **Public Wi-Fi Access:** Yes • Emery City Park – Parks and Recreation 65 East Main Street, Emery, Utah **Public Wi-Fi Access:** Yes	**East Carbon** • East Carbon Senior Center 451 Denver Ave, East Carbon, Utah 435-888-2194 **Number of Public Computers:** 3 **Public Wi-Fi Access:** Yes *Available primarily for senior citizens*
Elmo • Emery County Library – Elmo Branch 100 East Main Street, Elmo, Utah 435-653-2258 **Number of Public Computers:** 3 **Public Wi-Fi Access:** Yes • Emery Friendship Center P.O. Box 587, Emery, Utah 435-286-2219 **Number of Public Computers:** 1 **Public Wi-Fi Access:** Yes *Available primarily for senior citizens* • Elmo City Park – Parks and Recreation 35 South 100 East, Elmo, Utah **Public Wi-Fi Access:** Yes	**Ferron** • Emery County Library – Ferron Branch 90 North 200 West, Ferron, Utah 435-384-2637 **Number of Public Computers:** 2 **Public Wi-Fi Access:** Yes • Ferron City Park – Parks and Recreation 30 East Mill Road, Ferron, Utah **Public Wi-Fi Access:** Yes • Ferron Golf Course – Parks and Recreation 2810 West Canyon Road, Ferron, Utah **Public Wi-Fi Access:** Yes
Green River • Emery County Library – Green River 85 South Long Street, Green River, Utah 435-564-3349 **Number of Public Computers:** 5 **Public Wi-Fi Access:** Yes • Green River City Park – Parks and Recreation 85 North Solomon Street, Green River, Utah **Public Wi-Fi Access:** Yes	**Helper** • Helper City Library 19 South Main Street, Helper, Utah 435-472-5501 **Number of Public Computers:** 5 **Public Wi-Fi Access:** Yes
Huntington • Emery County Library – Huntington Branch 70 South Main Street, Huntington, Utah 435-687-9590 **Number of Public Computers:** 4 **Public Wi-Fi Access:** Yes • Huntington Skate Park – Parks and Recreation 1135 North Mohrland Road, Huntington, Utah **Public Wi-Fi Access:** Yes	**La Sal** • La Sal Senior Center 200 South Firehouse Road, La Sal, Utah 435-686-9990 **Number of Public Computers:** 1 **Public Wi-Fi Access:** Yes *Available primarily for senior citizens*
Moab • Grand County Library 257 East Center Street, Moab, Utah 435-259-1111 **Number of Public Computers:** 16 **Public Wi-Fi Access:** Yes • Moab Center – Department of Workforce Services Moab 457 Kane Creek Blvd, Moab, Utah 435-719-2600 **Number of Public Computers:** 20	**Monticello** • San Juan County Library – Monticello Branch 80 North Main Street, Monticello, Utah 435-587-2281 **Number of Public Computers:** n/a **Public Wi-Fi Access:** No • San Juan County Bookmobile Library **Number of Public Computers:** n/a **Public Wi-Fi Access:** No • Monticello Senior Citizens Center 80 East 100 North, Monticello, Utah 435-587-2401

Public Wi-Fi Access: Yes *Available primarily for job searching purposes* • Moab Senior Citizens Center 182 North 500 West, Moab, Utah 435-259-6623 **Number of Public Computers:** 4 **Public Wi-Fi Access:** Yes *Available primarily for senior citizens*	**Number of Public Computers:** 1 **Public Wi-Fi Access:** Yes *Available primarily for senior citizens*
Orangeville • Emery County Library – Orangeville 115 South Main Street, Orangeville, Utah 435-748-2726 **Number of Public Computers:** 2 **Public Wi-Fi Access:** Yes • Orangeville City Park – Parks and Recreation 80 North Main Street, Orangeville, Utah **Public Wi-Fi Access:** Yes	
Price • Price City Library 159 East Main Street, Price, Utah 435-636-3188 **Number of Public Computers:** 22 **Public Wi-Fi Access:** Yes • Price Center – Department of workforce services 475 West Price River Drive #300, Price, Utah 435-636-2300 **Number of Public Computers:** 38 **Public Wi-Fi Access:** Yes *Available primarily for job searching purposes* • Carbon Senior Citizens Center 450 South Fairgrounds, Price, Utah 435-636-3202 **Number of Public Computers:** 15 **Public Wi-Fi Access:** Yes *Available primarily for senior citizens* • Atwood Memorial Ball Field – Parks and Recreation 950 North 1000 East, Price, Utah **Public Wi-Fi Access:** Yes • Washington Park – Parks and Recreation 150 East 500 North, Price, Utah **Public Wi-Fi Access:** Yes • Peace Gardens – Parks and Recreation 125 W Main Street, Price, Utah **Public Wi-Fi Access:** Yes	
Wellington • Carbon County Bookmobile Library 19 South Main Street, Helper, Utah 435-472-0638 **Number of Public Computers:** 5 **Public Wi-Fi Access:** Yes ➢ Wellington City Park – Parks and Recreation 85 South 100 East, Wellington, Utah **Public Wi-Fi Access:** Yes	

Appendix E: Utah Broadband Nonadopters Regional Report

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UTAH BROADBAND NONADOPTERS

REGIONAL REPORT: SOUTHEASTERN UTAH ASSOCIATION OF LOCAL GOVERNMENTS REGION

NONADOPTERS OF BROADBAND:

SOUTHEASTERN UTAH ASSOCIATION OF LOCAL GOVERNMENTS REGION

Regional Report
June 2014

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SOUTHEASTERN UTAH ASSOCIATION OF LOCAL GOVERNMENTS REGIONAL REPORT

UNDERSTANDING NONADOPTION

Beginning with the passage of the Telecommunications Act of 1996, which directed the Federal Communications Commission (FCC) and state commissions to promote the universal deployment of both basic and advanced telecommunications capability, national policy has evolved to where universal Internet availability has become a stated national goal. Subsequent acts and directives from successive presidents have more specifically directed several agencies to encourage expanded broadband deployment and to increase their efforts aimed at promoting broadband adoption. For example, in 2004, a directive was issued from then President Bush for universal affordable broadband technology by 2007. These efforts have intensified under the current administration as programs funded under both the Universal Service Fund (USF) programs and the American Recovery and Reinvestment Act have contributed to increased infrastructure and promotion.[1]

Universal access to and use of broadband speed Internet is seen as a critical economic development factor, and one of the primary drivers of improved and enhanced employment and learning opportunities, medical services and a wider scope of entertainment and recreation.

The Pew Research Center's Internet and American Life Project has tracked the expansion of Internet use in the United States across time, space and among traditionally lower use groups. Despite this work, relatively little has been done to thoroughly examine those who continue to choose not to adopt despite widespread availability and ongoing reductions in relative cost.

In this study we explore only those who report not having broadband speed Internet, which we found is better described as high-speed Internet, available in their home. These 'nonadopters' represent the remaining part of the broadband gap that had been explored in our earlier work and in a plethora of previous literature on broadband adoption. This survey, in fact, was a direct result of our earlier work which along with the U.S. Census's work, failed to find a substantial rural urban broadband gap in Utah.

The purpose of this exploration is to better understand the nonadopter, who they are, their reason(s) for nonadoption, what skills and experience in using the Internet they have, and what would influence them to become an adopter of high-speed Internet. The answers to these questions will provide the information policymakers and broadband providers need to consider as they grapple with the issue of if and how nonadopters can become adopters.

What Influences Broadband Nonadoption

Literature exploring Internet adoption rates has generally advanced four theories for why individuals do not have in-home high-speed Internet service. These four theories present substantially different public policy prescriptions for correcting the problem. For policymakers, determining which of the competing theories (or which combination of them) best explains consumer behavior has substantial real-world policy impacts. The survey questions and the analysis of respondent's answers builds from these theories.

Questions of Price

The first and most common explanation of nonadoption is that of price sensitivity on the part of consumers. The literature on this subject asserts that due to relatively high, though falling, prices for these services, many consumers are simply unable to afford in-home high-speed Internet.

The usual policy prescriptions suggested by advocates of this theory are relatively straightforward and begin with the ex ante expectation that a reduction in price is necessary. A possible but controversial policy alternative that follows from this assumption would consider subsidizing either (or both) the development costs for deployment and the end user's cost.

Questions of Availability

The second, and formerly the most common theory that spurred our earlier work on this subject is that of availability. This theory suggests that nonadoption is a result of lack of deployment and availability and that most nonadopters will be clustered where deployment has not yet or will not occur because of questions of scale and profitability. For example, in one estimate Jon Peha of Carnegie Mellon University finds

that "roughly one-third of households in rural America cannot subscribe to broadband Internet services at any price."[2]

Again possible policy prescriptions from this theory are relatively straightforward, incentivizing and subsidizing deployment. One policy approach that is commonly advocated by proponents of this theory mimics the goals if not the approach of the rural telecommunications and electrification policy that brought these services to rural areas through subsidies and incentives paid for through surcharges on existing service.

Questions of Knowledge and Expertise

Unlike the first two theories of nonadoption, some have advanced the idea that the primary problem facing nonadopters is a lack of knowledge and skill on the part of the nonadopter in using and experiencing high-speed Internet and computing in general. Proponents of this approach point to lower levels of adoption among senior citizens and the increase in adoption after training or experience as evidence of its efficacy.

Here the policy prescriptions are more complex and are focused on education, outreach and individual assistance to push forward adoption by those who lack the skills. These programs are costly both in terms of fiscal and human resources. Those who advocate them have often suggested that partnerships between the public sector and non-profits could provide these nonadopters with skill training and assistance and look to the programs deployed at senior centers as prototypes for how these programs might be designed.

Questions of Demand and Preference

The fourth theory of nonadoption suggests that rather than structural impediments to adoption, like price, availability or knowledge and expertise issues, there are those whose consumer preferences simply align away from a desire to adopt. In fact the Pew Research Center, which has conducted numerous surveys about adoption, found that in the United States, 15 percent of American adults do not use the Internet. They found that a third of those non-users (34 percent) "think the Internet is just not relevant to them," and expressed a lack of interest or need in getting online. Of Internet non-users, 92 percent are not interested in starting to use the Internet or email in the future.[3]

Further, both a study from the Government Accounting Office completed in 2010 and one by Gregg LaRose[4] suggest lower income, less educated and elderly individuals are much less likely to want broadband access. These studies suggest that the gap in adoption of service is not an issue of supply; it's an issue of demand.

Here the policy implications are both clear and disheartening to the policymaker wishing to increase adoption. If individuals have no interest in a product it is nearly impossible to create demand absent some coercive requirement to purchase.

Expanding access to information, education, medical reference and employment is in the interest of public welfare. While these are compelling reasons for providing universal access to broadband Internet in the U.S., understanding why nonadopters don't adopt is of critical importance. If price is simply too high or service is simply not available, clear though controversial policy alternatives exist. If individuals lack knowledge or expertise training programs can be provided, but if there simply is no demand, these high-cost programs and subsidies will do little to sway nonadopters. Even in these cases if the driving purpose of broadband deployment to a given group is enhancement of educational goals or increased access to medical information, broadband community anchor institutions such as public schools, libraries or medical centers could be provided more cost effectively than community-wide deployment.

In the following analysis, we provide the results of the survey described earlier and explore which of the theories we find evidence for from our interviews with nonadopters across the state.

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NONADOPTERS OF BROADBAND IN THE SOUTHEASTERN UTAH ASSOCIATION OF LOCAL GOVERNMENTS REGION

The Southeastern Utah Association of Local Governments (SEUALG) region includes Carbon, Emery, Grand, and San Juan Counties, and is fairly isolated when compared to the rest of the state. The region relies on extractive and agricultural industries and is home to a substantial Native American population, with an estimated population of 56,350.

The SEUALG region is younger and has lower income than the state average.

The average age of respondents in the region is only 49.5, compared to the state average of 56.2. Households in the region make only $31,875 annually, compared to the state average of $51,347.

Nonadopters of broadband in the SEUALG region access the Internet infrequently.

About how often do you access the Internet?

Several Times	15.8%
Once a Day	10.5%
3-5 Days a Week	21.1%
1-2 Days a Week	0.0%
Every Few Weeks	21.1%
Do Not Access	31.6%

Key Findings: Reasons for Nonadoption

1. Lack of Interest or Need

Over 63 percent of the region's respondents are interested in having a faster high-speed connection in their homes in the future, higher than the statewide rate. Respondents saw many benefits to obtaining in-home broadband access.

Thinking about home high-speed Internet service, do you see any benefit to the following if you had access at home?

Work Productivity	57.9%
Children's Education	42.1%
Own Education	36.8%
Shopping	26.3%
Staying Connected to Family/Friends	0.0%

2. Knowledge and Expertise

A lack of knowledge and expertise is playing a key role in nonadoption. Over 63 percent of respondents ranked their computer skills as average or below average. When asked what would make them more likely to have high- speed Internet access in their homes, 63.1 percent answered training on computer and Internet use.

Have you participated in a class, seminar or other program to improve your computer or Internet skills?

No	73.7%
Yes	26.3%

3. High Cost

Cost is also playing a key role, as 31.6 percent of respondents said the main reason they have not adopted high-speed Internet is that services are too expensive. Over 47 percent of respondents in the SEUALG region said that if high-speed Internet were to cost less, they would be more likely to get access in their homes.

4. Lack of Availability and Knowledge

When asked how many service providers are available in their area, 57.9 percent of respondents in the SEUALG region did not know. Actual broadband availability in the region is high, although San Juan County lags behind in terms of providing high- speed coverage to a majority of homes.

What would make you more likely to have high-speed Internet access in your home?

Having it Available	68.4%
Training on the Computer/Internet	63.1%
More Options	52.6%
Lower Price	47.4%
Other	21.1%

Conclusion: High cost and lack of interest or need were tied as the top two reasons for nonadoption of high-speed Internet in the SEUALG region.

SEUALG REGION

The Southeastern Utah Association of Local Governments (SEUALG) region includes Carbon, Emery, Grand and San Juan Counties, with a combined estimated population of 56,350.[5] This region covers the southeastern area of Utah. The region in general, and the Four Corners area in particular, has limited transportation options and a significantly isolated population. The SEUALG region is dominated by large-scale public land ownership, and relies primarily on extractive and agricultural industries for the bulk of the region's economic activities. The region is also home to a substantial Native American population that has a significant influence on the region's culture, history and orientation.

Demographic Picture

Respondents in the SEUALG region were similar to the state average in terms of many demographic indicators including gender, while differing significantly on other factors, including age. In the region, 52.6 percent of respondents were male, compared to the state average of 52.4 percent. The SEUALG region is much younger, on average, than the state as a whole, with a mean age of 49.5 compared to the state average of 56.2. The age range of respondents in the SEUALG region was more densely concentrated around middle-aged people than the state average. In the region 38.9 percent of respondents were between 51 and 60 years old, while statewide only 13.49 percent of respondents fit within that range. Likewise, only 31.6 percent of respondents' households had members 46-60 years old while

statewide that number was more than twice as high, at 79 percent. The region's respondents also differed widely from the state average in terms of marital status. Of respondents in the SEUALG region, 68.4 percent were married, compared to the state average of only 48 percent.

Total household income for respondents in the SEUALG region was much lower than the state average. Average household income in the region was only $31,875 compared to the state average of $51,347. The standard deviation for income in the region was lower than the state average, meaning that respondents' income in the SEUALG region is less varied than in the state as a whole. The SEUALG region had a much higher percentage of respondents (37.5 percent) making less than $12,000 per year than the state as a whole (13.6 percent).

In terms of employment status, a higher percentage of respondents in the SEUALG region were employed part-time (15.8 percent) than the state average of 9.2 percent. The region also had a higher percentage answer that they were students, at 10.5 percent compared to a state average of 3.8 percent. This is interesting because most students are at the younger end of the population spectrum, while most nonadopters of broadband are older. The SEUALG region had a lower percentage of retired respondents, at 26.3 percent compared to the statewide average of 42.8 percent. The region had an unemployment rate of 5.3 percent, half the state average.

Respondents in the SEUALG region were predominately white, although at a lower rate (68.4 percent) than the state average of 80.6 percent. This can be explained by the fact that the region has a much larger population of Native Americans, making up 15.8 percent of the region's respondents compared to an overall state average of only 4.2 percent. The average level of education among nonadopters in the SEUALG region was lower than the state average. In the region, only 10.5 percent of respondents had obtained a four-year degree compared to a state average of 16.8 percent.

Low Internet Access Rates Among Nonadopters

Respondents in the SEUALG region were asked how often they access the Internet, and 31.6 percent said they never access the Internet. Just over 21 percent said they

access the Internet every few weeks, with another 21 percent accessing the Internet every three to five days. About 15.8 percent of respondents said they access the Internet several times per day. Those numbers correspond with the state's overall breakdown of Internet access frequency, although the percentage of respondents in the SEUALG region who never access the Internet is higher than the state average of 24.8 percent.

Similarly, most respondents do not pay for a data plan on their cell phone. Clearly, the frequency of Internet access among nonadopters is low, although it is not clear whether that is due to lack of interest or desire to access the Internet, limited computer skills, the high cost of Internet access or limited access to technology. All of these are likely playing a role, although probably not with equal influence. We examine the role each of these reasons below.

Reasons for Nonadoption: Lack of Interest or Need

One of the reasons for nonadoption both at the state level and in the SEUALG region was a lack of interest or need, although other factors are also contributing to nonadoption. The majority of nonadopters in the SEUALG region, 68.4 percent, said high-speed Internet was available. Of the region's respondents, 31.6 percent said that the key reason they do not have high-speed Internet at home is because they do not need it or are not interested. That number is lower than the state average of 44 percent.

Respondents were also asked if they would like to have a faster high-speed connection in the future and 63.2 percent said that they would. This means the majority of nonadopters in the SEUALG region do have an interest in getting faster high-speed Internet, and that lack of interest may not be the key reason for nonadoption in this area. At the state level, 60 percent of respondents were not interested in obtaining a faster connection. This means that interest in high-speed Internet may actually be higher in the SEUALG region than in the rest of the state.

Finally, respondents were asked if they would see any benefit to different areas of their life if they had Internet access at home. Nearly 60 percent said they would see increases in work productivity, just over 42 percent said they would see benefits to their children's education, and nearly 37 percent said their own education would benefit.

Interest in obtaining high-speed Internet access in the SEUALG region is clearly higher than in other regions of the state, and higher than the state average. This is encouraging news for policymakers who seek to increase broadband adoption, because demand already exists. The following sections will explore other reasons for nonadoption, along with policy implications for each.

Reasons for Nonadoption: Knowledge and Expertise

When respondents were asked about their computer use and expertise, results found evidence that a lack of expertise about computers in general, and the Internet specifically, is likely playing a key role in nonadoption both in the SEUALG region and in the state.

Over 84 percent of respondents said that they have computer equipment in the home. Respondents were asked to rank their computer skills on a scale from zero to 10, with zero being no computer skills and 10 being very highly skilled. In the SEUALG region, 63.1 percent of respondents ranked themselves at a five or lower. This means that over half of the sample believes their computer skills are average or below average.

Respondents were also asked if they had participated in a class, seminar or other program to improve their computer skills and 73.7 percent said they had not. When asked what would make them more likely to have high-speed Internet access in their homes, 63.1 percent answered training on computer and Internet use. These results indicate that providing training and educational programs geared toward increasing computer literacy and Internet skills may be one of the most effective ways to increase adoption rates for broadband.

Reasons for Nonadoption: Price

Another key reason cited for nonadoption at both the state and regional level is that high-speed Internet services are too expensive. About 31.6 percent of respondents listed high cost as the main reason why they do not have high-speed Internet access at home. That number is higher than the state average of 22 percent. High cost was tied with lack of interest as the top two reasons for non-adoption in the region. This shows that the price of broadband in the SEUALG region is a key reason for nonadoption, although the region's low income may also be impacting respondents' answers.

Respondents were asked how much high-speed Internet costs, and their responses were widely distributed: 16.7 percent said service costs less than $25 per month, 24.9 percent said between $26 and $35, and 25 percent said between $36 and $45 per month. A 2011 study by Ryan Yonk and Randy Simmons, at Southern Utah University and Utah State University respectively, found that broadband customers statewide were actually paying, on average, between $42 and $43 per month for high-speed Internet service.[6]

When asked how much high-speed Internet should cost, 71.4 percent of respondents in the SEUALG region said high-speed Internet should cost less than $25 per month. This rate of response is even higher than the statewide response in which almost half of respondents said high-speed Internet should cost less than $25 per month. Nonadopters in the SEUALG region clearly have a lower tolerance for high prices of broadband. For comparison, in 2011, Yonk and Simmons found that rural respondents in Utah were willing to pay an average of $33.13 per month for high-speed Internet services compared to non-rural respondents who were willing to pay $34.75.[7]

Over 47 percent of respondents in the SEUALG region said that if high-speed Internet were to cost less, they would be more likely to get access in their homes. Nonadopters in the region may simply not be willing to pay the current prices of high-speed Internet services. Although it would not be recommended, subsidizing either the supply or the demand side of the high-speed Internet market may be one way to achieve this.

Reasons for Nonadoption: Not Available

Another reason found for nonadoption is the technology necessary to access high-speed Internet may not be available. Respondents in the SEUALG region were asked whether they have computer equipment in their homes and over 84 percent said they do. Statewide, only 66.8 percent of respondents had in-home computers. Because the SEUALG region has a lower household income than much of the state, it is surprising that the area has a higher rate of in-home computers than the state average. The high rate of in-home computers in the region means that availability of hardware is most likely not a key reason for nonadoption.

In examining reasons for nonadoption, respondents seem to suffer from a lack of knowledge. When asked how many service providers are available in their area, 57.9 percent of respondents in the SEUALG region did not know. This means there may be providers of Internet available that respondents simply don't know about. When asked what would make them more likely to high-speed Internet, 68.4 percent said having it available in their area. Clearly, there is a perception of limited availability.

Data for broadband availability show that Carbon, Emery and Grand Counties all have broadband available to at least 88 percent of households at download speeds of at least 25 Mbps. San Juan County has lower levels of availability, as over 99 percent of households have broadband available at download speeds of at least 3 Mbps, but only 1.64 percent of households have access to download speeds of at least 25 Mbps. This data shows that broadband availability in the region is varied. While most of the counties in the SEUALG region have high-speed Internet available to a majority of their households, San Juan Country lags behind. This analysis also did not evaluate specific upload speeds by county, which was done in order to facilitate an enhanced evaluation of download speeds by county.

As far as availability goes, policymakers could help solve the knowledge problem by educating people about the high-speed Internet options available in their area. As for the lack of broadband availability in San Juan County, policymakers may want to explore possible methods for incentivizing the development of more extensive coverage in this remote corner of the state.

Endnotes

1 In the US, a broadband Internet connection is defined as a connection with capabilities of at least 768 kbps. Other countries have different definitions. Canada uses 1.5 Mbps.

2 Federal Communications Commission WC Docket No. 07-38 via http://www.rupri.org/Forms/RuralBroadbandFinal.pdf

3 Zickuhr, Kathryn. 2013, September 25. Who's Not Online and Why. Pew Research Internet Project. Retrieved from: http://www.pewinternet.org/2013/09/25/whos-not-online-and-why/

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5 According to the 2010 US Census

6 Yonk, Ryan and Simmons, Randy T. Utah Broadband Access. P. 24. Retrieved from: http://broadband.utah.gov/wp-content/uploads/sites/2/2013/05/ Utah-Broadband-Access-Submitted-Report-Final.pdf

7 Yonk and Simmons, et al.

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End of Appendix E: Utah Broadband Nonadopters Regional Report

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