

Missouri Broadband Report and FCC's Actions on Broadband

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The Senate Committee on Commerce, Consumer Protection, Energy and the Environment requested the Public Service Commission engage in a fact finding process ending in a report to the General Assembly in December 2011. This report includes:

- A review of the Federal Communications Commission's (FCC) National Broadband Plan.
- Recommendations on how to maximize broadband development in Missouri.
- Solicitation of input from the public and providers.
- An assessment of the current level of high-speed Internet access.
- Identification of unserved and underserved areas.
- Identification of barriers to deployment.
- Recommendations and potential public policy decisions that should be considered to increase deployment and availability.

PSC Jurisdiction Over Broadband

- The PSC has little to no jurisdiction over the deployment of broadband in Missouri.
- The PSC regulates some of the facilities over which broadband can be deployed. Examples include equipment or wires that are also used to provide telecommunications service.
- The FCC has provided a role for state commissions related to receipt of federal universal service funds to be used for broadband deployment. The PSC has authority to:
 - Authorize providers as eligible to receive funding.
 - Certify providers are using funds in accordance with the Telecommunications Act.

Key Points of Broadband Report

- Level of Broadband Deployment in Missouri
 - 99 percent according to Missouri mapping effort
 - 86.5 percent according to federal reports
- Missouri's reporting efforts differ from federal reporting efforts due to:
 - Accuracy of data
 - Data collected from different sources
- Missouri can achieve its broadband goal by:
 - Expanding the purpose of the Missouri universal service fund
 - Regulating pole attachments
 - Making it easier for municipalities to provide broadband service
 - Creating programs to stimulate demand
 - Encouraging public/private partnerships

FCC's National Broadband Plan

- Every household and business location in America will have access to affordable broadband service with actual download speeds of at least 4 megabits per second (Mbps) and actual upload speeds of 1 Mbps by 2020. (This speed represents the FCC's standard as the minimum speed necessary to stream video.)
- Six long-term goals
 1. At least 100 million US homes should have affordable access to actual download/upload speeds of at least 100 Mbps/50 Mbps.
 2. The US should lead the world in mobile innovation, with the fastest and most extensive wireless networks of any nation.
 3. Every American should have affordable access to robust broadband service, and the means and skills to subscribe if they so choose.
 4. Every community should have access to at least 1 gigabit per second for schools, hospitals, government buildings, etc. (This speed, which is 1000 times greater than the standard for households and businesses, will accommodate such things as telemedicine and distance learning.)
 5. Every first responder should have access to a nationwide, wireless, interoperable broadband public safety network.
 6. Every American should be able to use broadband to track and manage real-time energy consumption.

An Assessment of the Current Level of High-Speed Internet Access Service in Missouri

- Missouri 's broadband mapping effort
 - Missouri mapping effort shows an unserved population of approximately 1 percent.
 - FCC's estimate of Missouri's unserved population is 11 to 13.5 percent – There are several reasons for the discrepancies, including:
 - Data submitted by providers to state and federal agencies is not consistent.
 - Reporting standards are different for state and federal agencies.
 - Data submitted may not be accurate.
 - Over 97 percent of Missourians have access to multiple broadband providers.
 - The Department of Commerce – National Telecommunications and Information Agency (NTIA) established state data collection speeds at:
 - 768 kilobits per second (kbps) download
 - 200 kbps upload
 - These speeds are the minimum speeds that must be available for an area to be considered “served” by NTIA.
 - These speeds differ from the FCC's previously mentioned 4/1 Mbps. (A megabit is 1000 kilobits.)

FCC report suggests Missouri lags in broadband availability

- Missouri's unserved population percentages are higher than overall US percentages.
 - Missouri's unserved population – 11 percent to 13.5 percent
 - United States unserved population – 7.7 percent to 8.4 percent
 - Missouri's percentage of unserved population ranks 6th highest in the nation.
 - Missouri's percentage of unserved, per capita, ranks 16th highest in the nation.
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- Missouri's rural unserved population – 28.2 to 40.1 percent
 - Missouri's urban unserved population – 1.3 to 2.9 percent

Unserved and Underserved Areas

- 23 Missouri counties are identified as “underserved” by the FCC.
- 9 counties are indentified as “underserved” by the FCC and state mapping data.
 - Bollinger
 - Douglas
 - Harrison
 - Oregon
 - Ozark
 - Reynolds
 - Schuyler
 - Shannon
 - Washington
- Missouri mapping representatives indicate, “Extremely rural areas of the state, such as the Ozark Foothills, are the primary locations for lower concentrations of broadband service.”

COUNTY	Estimated number of Households with NO PROVIDERS	Estimated number of households with ONE PROVIDER	Estimated number of households with MULTIPLE PROVIDERS	ALL HOUSEHOLDS	PERCENT HH NO PROVIDERS	PERCENT HH ONE PROVIDER	PERCENT HH MULTIPLE PROVIDERS
Adair	0	3	11,260	11,263	0.000	0.027	99.973
Andrew	0	0	7,306	7,306	0.000	0.000	100.000
Atchison	8	229	2,748	2,985	0.268	7.672	92.060
Audrain	6	54	10,792	10,852	0.055	0.498	99.447
Barry	30	333	17,160	17,523	0.171	1.900	97.928
Barton	0	59	5,541	5,600	0.000	1.054	98.946
Bates	1	102	7,739	7,842	0.013	1.301	98.687
Benton	1,259	1,557	11,334	14,150	8.898	11.004	80.099
Bollinger	2,074	1,650	2,154	5,878	35.284	28.071	36.645
Boone	0	0	69,551	69,551	0.000	0.000	100.000
Buchanan	0	0	38,427	38,427	0.000	0.000	100.000
Butler	199	887	18,645	19,731	1.009	4.495	94.496
Caldwell	0	23	4,582	4,605	0.000	0.499	99.501
Callaway	0	0	18,522	18,522	0.000	0.000	100.000
Camden	1,083	3,060	37,040	41,183	2.630	7.430	89.940
Cape Girardeau	148	666	31,802	32,616	0.454	2.042	97.504
Carroll	0	399	4,231	4,630	0.000	8.618	91.382
Carter	86	640	2,521	3,247	2.649	19.711	77.641
Cass	0	0	40,030	40,030	0.000	0.000	100.000
Cedar	15	753	6,456	7,224	0.208	10.424	89.369
Chariton	35	486	3,646	4,167	0.840	11.663	87.497
Christian	39	141	31,396	31,576	0.124	0.447	99.430
Clark	10	461	3,002	3,473	0.288	13.274	86.438
Clay	0	0	93,918	93,918	0.000	0.000	100.000
Clinton	0	0	8,876	8,876	0.000	0.000	100.000
Cole	0	0	32,324	32,324	0.000	0.000	100.000

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Cooper	0	27	7,436	7,463	0.000	0.362	99.638
Crawford	0	1,262	10,693	11,955	0.000	10.556	89.444
Dade	0	119	3,846	3,965	0.000	3.001	96.999
Dallas	127	638	6,897	7,662	1.658	8.327	90.016
Daviess	1	30	4,168	4,199	0.024	0.714	99.262
DeKalb	13	139	4,177	4,329	0.300	3.211	96.489
Dent	197	1,203	5,885	7,285	2.704	16.513	80.782
Douglas	95	808	5,616	6,519	1.457	12.395	86.148
Dunklin	2	280	14,137	14,419	0.014	1.942	98.044
Franklin	18	361	43,040	43,419	0.041	0.831	99.127
Gasconade	40	678	7,487	8,205	0.488	8.263	91.249
Gentry	0	1	3,208	3,209	0.000	0.031	99.969
Greene	0	0	125,387	125,387	0.000	0.000	100.000
Grundy	0	141	4,882	5,023	0.000	2.807	97.193
Harrison	1	29	4,377	4,407	0.023	0.658	99.319
Henry	1	199	10,686	10,886	0.009	1.828	98.163
Hickory	393	2,104	4,338	6,835	5.750	30.783	63.467
Holt	0	0	2,806	2,806	0.000	0.000	100.000
Howard	28	357	4,197	4,582	0.611	7.791	91.598
Howell	0	55	17,966	18,021	0.000	0.305	99.695
Iron	340	1,357	3,632	5,329	6.380	25.464	68.155
Jackson	0	0	312,105	312,105	0.000	0.000	100.000
Jasper	0	36	50,632	50,668	0.000	0.071	99.929
Jefferson	184	461	86,981	87,626	0.210	0.526	99.264
Johnson	0	99	21,429	21,528	0.000	0.460	99.540
Knox	0	1	2,288	2,289	0.000	0.044	99.956

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Laclede	110	257	15,411	15,778	0.697	1.629	97.674
Lafayette	0	59	14,659	14,718	0.000	0.401	99.599
Lawrence	0	0	16,649	16,649	0.000	0.000	100.000
Lewis	0	69	4,466	4,535	0.000	1.521	98.479
Lincoln	67	793	20,151	21,011	0.319	3.774	95.907
Linn	134	1,028	5,267	6,429	2.084	15.990	81.926
Livingston	0	281	6,449	6,730	0.000	4.175	95.825
Macon	0	29	7,636	7,665	0.000	0.378	99.622
Madison	828	1,216	3,926	5,970	13.869	20.369	65.762
Maries	16	194	4,401	4,611	0.347	4.207	95.446
Marion	0	110	12,716	12,826	0.000	0.858	99.142
McDonald	5	328	9,592	9,925	0.050	3.305	96.645
Mercer	2	28	2,105	2,135	0.094	1.311	98.595
Miller	165	464	12,129	12,758	1.293	3.637	95.070
Mississippi	28	50	5,633	5,711	0.490	0.876	98.634
Moniteau	0	47	6,129	6,176	0.000	0.761	99.239
Monroe	24	1,003	3,771	4,798	0.500	20.905	78.595
Montgomery	4	104	6,022	6,130	0.065	1.697	98.238
Morgan	947	1,451	13,119	15,517	6.103	9.351	84.546
New Madrid	1	38	8,492	8,531	0.012	0.445	99.543
Newton	0	50	24,263	24,313	0.000	0.206	99.794
Nodaway	0	91	9,433	9,524	0.00	0.955	99.045
Oregon	787	1,399	3,300	5,486	14.346	25.501	60.153
Osage	0	85	6,448	6,533	0.000	1.301	98.699
Ozark	23	185	5,444	5,652	0.407	3.273	96.320
Remiscot	0	0	8,161	8,161	0.000	0.000	100.000

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Perry	195	486	7,887	8,568	2.276	5.672	92.052
Pettis	7	44	18,198	18,249	0.038	0.241	99.721
Phelps	9	249	19,275	19,533	0.046	1.275	98.679
Pike	24	1,250	6,601	7,875	0.305	15.873	83.822
Platte	0	0	39,223	39,223	0.000	0.000	100.000
Polk	35	346	12,923	13,304	0.263	2.601	97.136
Pulaski	87	154	17,663	17,904	0.486	0.860	98.654
Putnam	0	4	2,978	2,982	0.000	0.134	99.866
Ralls	1	396	4,786	5,183	0.019	7.640	92.340
Randolph	31	372	10,311	10,714	0.289	3.472	96.239
Ray	0	206	9,778	9,984	0.000	2.063	97.937
Reynolds	632	1,628	1,773	4,033	15.671	40.367	43.962
Ripley	752	1,357	4,488	6,597	11.399	20.570	68.031
Saline	0	781	9,336	10,117	0.000	7.720	92.280
Schuyler	0	9	2,093	2,102	0.000	0.428	99.572
Scotland	0	14	2,355	2,369	0.000	0.591	99.409
Scott	4	54	16,929	16,987	0.024	0.318	99.659
Shannon	258	621	3,285	4,164	6.196	14.914	78.890
Shelby	0	29	3,177	3,206	0.000	0.905	99.095
St. Charles	0	0	141,016	141,016	0.000	0.000	100.000
St. Clair	126	1,587	3,927	5,640	2.234	28.138	69.628
St. Francois	97	426	27,935	28,458	0.341	1.497	98.162
St. Louis	0	0	438,032	438,032	0.000	0.000	100.000
St. Louis City	0	0	176,002	176,002	0.000	0.000	100.000
Ste. Genevieve	186	367	8,084	8,637	2.154	4.249	93.597
Stoddard	51	94	13,464	13,609	0.375	0.691	98.935

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Stone	0	0	20,373	20,373	0.000	0.000	100.000
Sullivan	0	42	3,316	3,358	0.000	1.251	98.749
Taney	0	60	29,195	29,255	0.000	0.205	99.795
Texas	84	931	10,670	11,685	0.719	7.967	91.314
Vernon	29	664	8,802	9,495	0.305	6.993	92.701
Warren	0	100	14,585	14,685	0.000	0.681	99.319
Washington	580	1,548	8,889	11,017	5.265	14.051	80.684
Wayne	3,215	2,676	2,192	8,083	39.775	33.107	27.119
Webster	0	1	14,416	14,417	0.000	0.007	99.993
Worth	0	58	1,223	1,281	0.000	4.528	95.472
Wright	33	169	8,498	8,700	0.379	1.943	97.678
TOTAL	16,010	47,970	2,648,749	2,712,729	0.590	1.768	97.641

Key: **RED** = FCC identified as underserved
RED with highlight = FCC and MO identified as underserved

Broadband Service Rates in Missouri

- DSL and cable broadband plans of companies surveyed
 - Least expensive plan is \$14.95 per month for 768 kbps.
 - Most expensive plan is \$199.95 per month for 105 Mbps.
- Wireless plans of companies surveyed
 - Least expensive plan is \$10 per month with a 75 megabytes (MB) data allowance.
 - Most expensive plan is \$100 per month with a 12 gigabytes (GB) data allowance.
 - Wireless plans do not generally price by speed, but by the amount of content that is available each month.

Input from the Public

- Missouri's 19 Regional Planning Commissions surveyed residential customers
 - 88 percent of survey responders have Internet access at home.
 - The average monthly fee for responders is \$42.87.
 - “Broadband speed” is the factor cited by most responders as being the decision factor in choosing connection type and provider.
 - Rural residents are significantly more likely than non-rural residents to cite availability as a key factor.
 - Most responders are satisfied with the speed and reliability available in their area, but 53 percent are dissatisfied with the number of providers.

Input from the Public

- A business survey was conducted on-line via the MoBroadbandNow website.
 - Most responders were satisfied with their broadband service.
 - Most responders indicated a robust broadband connection is very important to the day-to-day operations of the business.
 - Most responders indicated few choices for broadband service.

Broadband Adoption

- An NTIA study estimates 64 percent of all Missouri households currently *subscribe* to broadband service. (Figures on pages 6 and 7 represent various percentages of households for which broadband is not *available*.)
- Factors influencing adoption:
 - Income
 - Presence of school-aged children
 - Household age
 - Urban versus rural
 - Race
 - Disability
- Reasons for not subscribing to broadband service:
 - Broadband unavailable
 - Broadband too expensive
 - Do not need it/uninterested

Barriers to Broadband Deployment

- The private sector will not deploy broadband where there is no business case for operating a broadband network.
- Some of the key reasons for difficulty in deploying broadband infrastructure are difficulty in accessing utility poles, conduits, rooftops, tower sitings, rights of way.
- Lack of “middle mile” infrastructure, or the network necessary to connect local providers to “the world”.
- Insufficient spectrum for wireless broadband.
- Consumer subscribership .

Recommendations and Potential Public Policy Decisions

- The Missouri universal service fund could be used to help with broadband deployment by:
 - Supplementing federal funding in high cost areas.
 - Helping make broadband service available for low-income consumers.
 - Missouri could regulate pole attachments.
 - Missouri could make it easier for municipalities to provide broadband service by also allowing them to offer voice and video service.
 - Missouri could create programs to stimulate demand.
 - Missouri could encourage public/private partnerships.
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- 53 percent of Americans indicate expansion of affordable broadband should NOT be a high government priority, according to a PEW Internet Study.

FCC's Actions on Broadband

- October 27, 2011 – FCC adopted an order that “comprehensively reforms and modernizes the universal service and intercarrier compensation systems to ensure that robust, affordable voice and broadband service, both fixed and mobile, are available to Americans throughout the nation.”
- Adopts support for broadband-capable networks as an express universal service principle.
- Requires all federal Universal Service Fund (USF) recipients to offer both voice and broadband service.
 - The federal USF provides support to providers in high cost areas. Funds are collected through a surcharge on consumer bills.

FCC's Actions on Broadband

- Connect America Fund
 - Annual funding target of no more than \$4.5 billion for 6 years.
 - Census blocks will be used to determine cost of services.
 - Existing high-cost support frozen.
 - Limits high-cost support in areas where local rates do not meet a specified floor.
 - Some carriers required to meet deployment milestones.
 - Certain areas subject to competitive bidding/auction process.
- Mobility Fund
 - Phase 1 – One time support for 3G or greater broadband deployment.
 - Phase 2 – On-going support for advanced networks.
- Remote Areas Fund
 - \$100 million annually to ensure Americans living in the most remote areas of the nation can obtain affordable broadband through alternative technologies.

FCC's Actions on Broadband

- Intercarrier Compensation (ICC) Reform
 - Adopts “bill and keep” as the default methodology for all intercarrier compensation traffic.
 - Terminating access rates (including intrastate access rates) transition in 6 to 9 years.
 - Certain transport rates are capped or transition to “bill and keep”.
 - Carriers can negotiate alternative rates.
 - Other components of access reform are not addressed.

FCC's Actions on Broadband

- Access Recovery Mechanism (ARC) available for wireline providers
 - Not 100 percent revenue neutral.
 - Limited to 6 annual increases of \$.50 per month.
 - May not be charged to Lifeline customers.
 - Establishes a residential rate ceiling that prohibits carriers from imposing an ARC on any consumer paying a local rate of \$30 or more.

Resources

- National Broadband Plan – www.broadband.gov
- National Broadband Map – www.broadbandmap.gov
- Federal Communications Commission – www.fcc.gov
- US Department of Commerce, National Telecommunications and Information Administration – www.ntia.doc.gov

- Missouri Broadband Initiative – www.mobroadbandnow.com
- Public Service Commission – www.psc.mo.gov