



NewStreet
Research

Introducing Broadband Insights

NSR US Broadband Database

July 2024

What is Broadband Insights?



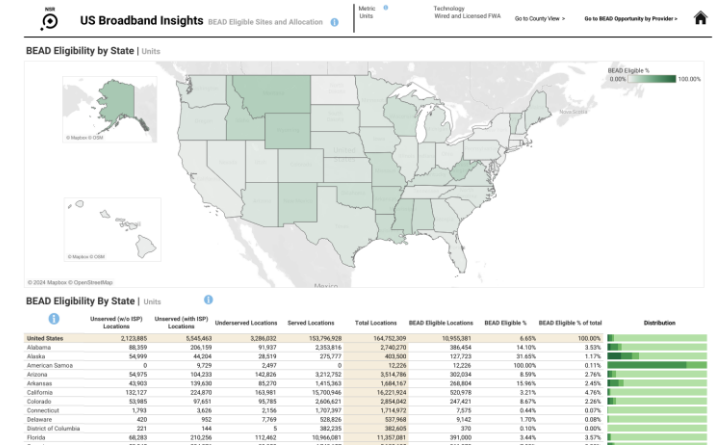
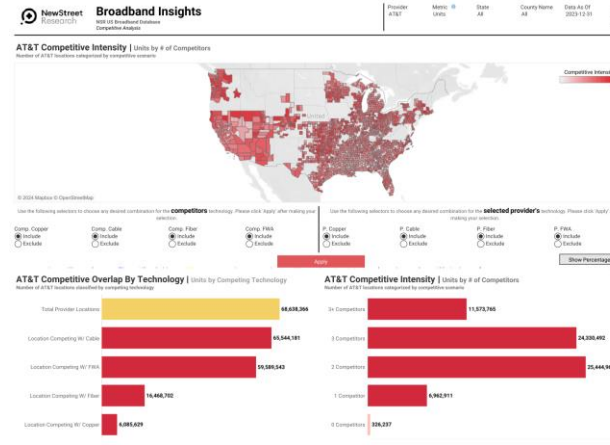
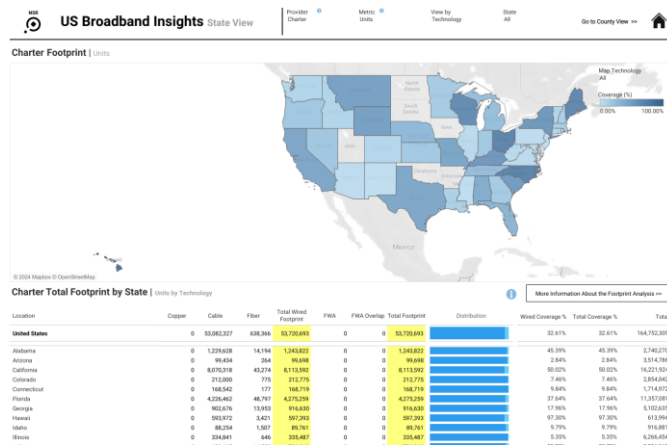
Welcome to **Broadband Insights!** This proprietary tool developed by New Street Research provides comprehensive insights into the broadband landscape in the US. In this first version, we offer detailed information on broadband footprint, competitive landscape, and BEAD opportunities for the top 25 fixed broadband providers that account for ~90% of the market. In subsequent versions, we will be refining this tool with additional analysis and features.

Analyses Included

Broadband Footprint Analysis: Provides detailed broadband coverage data for the top 25 fixed internet service providers in the US, including passings, speeds, and technologies across various geographic levels.

Competitive Analysis: Examine the competitive dynamics of selected providers by analyzing the intensity of competition and overlap with other relevant providers and technologies across various geographic levels.

BEAD Analysis: Understand the BEAD allocation per State and the BEAD eligible sites by geography. Identify the BEAD opportunity for the different fixed broadband providers.



Key Features

Broadband Insights includes broadband data for the top 25 fixed internet service providers across the US. Users can switch between views at national, state, and county levels, with detailed analysis available up to the Census Block level on demand. The tool has an interactive, user-friendly interface. We can also conduct tailor-made analysis when the visualizations we have created don't meet our client's specific needs.

1

Comprehensive Broadband Insights

Information on broadband footprint, competitive landscape, and BEAD for the top 25 fixed internet service providers.

Provider passings, including speed and technology details.

Competitive intensity and overlap with top relevant providers and technologies.

BEAD-eligible sites and allocation by geography, revealing the opportunity for different providers.

2

Granular & Historical Data Available

Detailed analysis at national, state and county levels.

More granular analysis up to the Census Block level available on demand.

Historical data available

3

Robust Methodology & Data Quality

Rely on data validated through multiple sources and expert insights to ensure accuracy and relevance.

Semiannual updates.

Data sources include:

- FCC National Broadband Map
- Company disclosures
- FCC Form 477
- US Census Bureau
- Industry experts
- NSR Knowledge Base

4

Interactive, Dynamic & User-Friendly Tool

Interactive and customizable maps and charts for easy data exploration.

Ability to filter data by provider, technology, and geography for targeted analysis.

Intuitive interface that allows for easy navigation.

5

Tailor-made Analysis On Demand

Our Data Analytics team can leverage the extensive datasets available to run customized analyses tailored to specific client needs, offering insights beyond standard visualizations available in the tool.

Data Sources

Broadband Insights analyses primarily rely on the latest version of FCC National Broadband Map (June 2023), supplemented by company disclosures, FCC Form 477, US Census Bureau data, expert interviews, and the NSR knowledge base.

Main Data Source

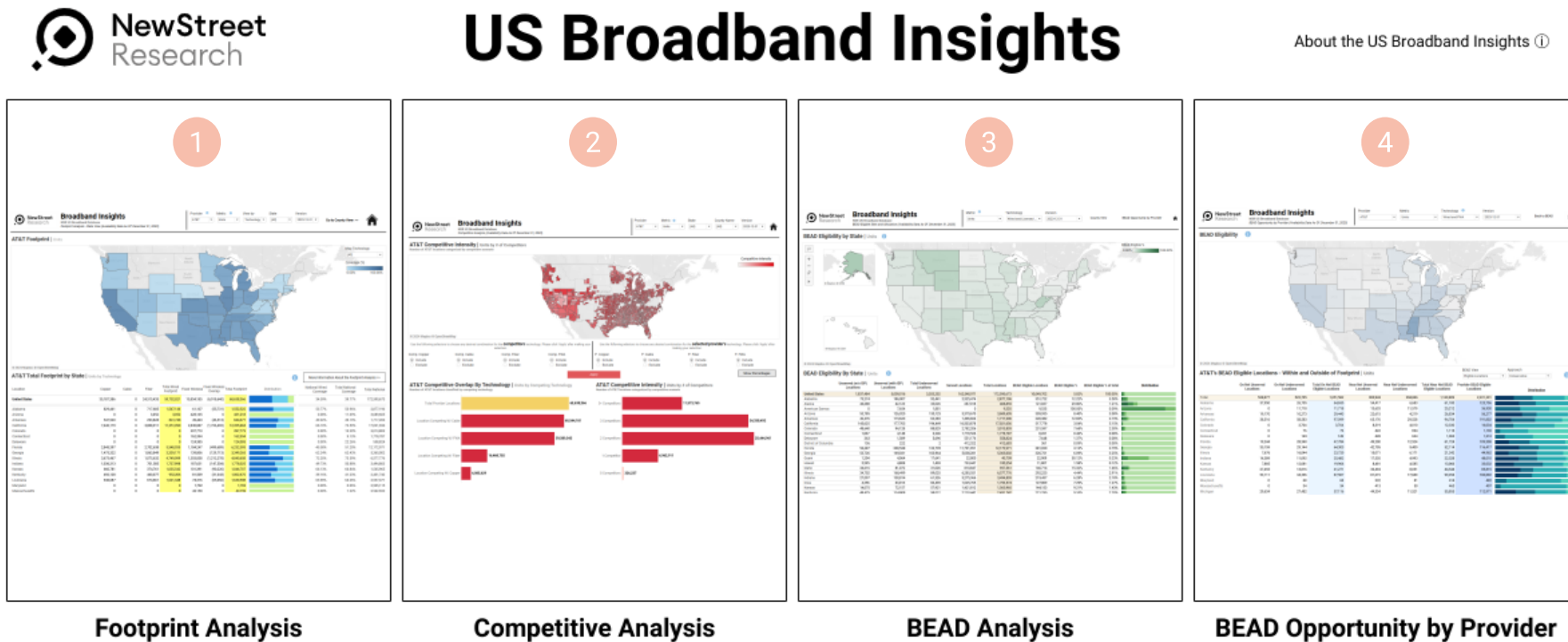
- **FCC National Broadband Map:** The main dataset used in this tool is sourced from the latest version available of the Federal Communications Commission (FCC) National Broadband Map, as of June 30, 2023, last updated on April 16, 2024. This map comprises two key datasets:
 1. **The Fabric:** Developed by CostQuest, this dataset includes all locations in the United States and Territories where fixed broadband internet access service is or could be installed.
 2. **Broadband Data Collection:** Internet Service Providers (ISPs) report their availability at the locations included in the Fabric to the FCC every 6 months. For every location, they must indicate where they offer mass-market Internet access service using their own broadband network facilities, including details on speed, latency and technology. ISPs must report where they offer broadband Internet service to fixed locations such as homes and small businesses on a location-by-location basis.

Other Data Sources

- **NSR knowledge base and other sources:** we leverage our own knowledge, information and analyses gathered during all our years of work in the telecommunications industry.
- **Companies' disclosures:** We utilize documents, reports and information that companies make publicly available to investors and regulatory authorities such as the Securities and Exchange Commission (SEC).
- **FCC Form 477:** former data collection tool used by the Federal Communications Commission (FCC) to gather information on fixed broadband deployment across the United States. We used this source to reconcile and triangulate companies' footprint reported in their filings with the FCC National Broadband Map.
- **US Census Bureau:** we use housing units data at the census block level from the U.S. Census Bureau to estimate the number of housing units per location, and for additional demographic information.
- **Industry Leaders:** we validated our data with independent industry leaders.

Four Sections to Start

The current version of **Broadband Insights** contains four main analyses: Footprint Analysis, Competitive Analysis, BEAD Analysis and BEAD Opportunity by provider. As we continue to enhance the product, we will add more sections with additional analyses.



Section #1: Provider's Footprint Analysis

The Footprint Analysis section of **Broadband Insights** provides a comprehensive view of coverage and service capabilities across of the top 25 fixed internet service providers. In this section, you can 1) explore data on Broadband Service Locations (BSLs), Units, or Housing Units passed by each provider; 2) access information on the speed and technology offered; 3) view data at various geographic levels, including national, state, and county.

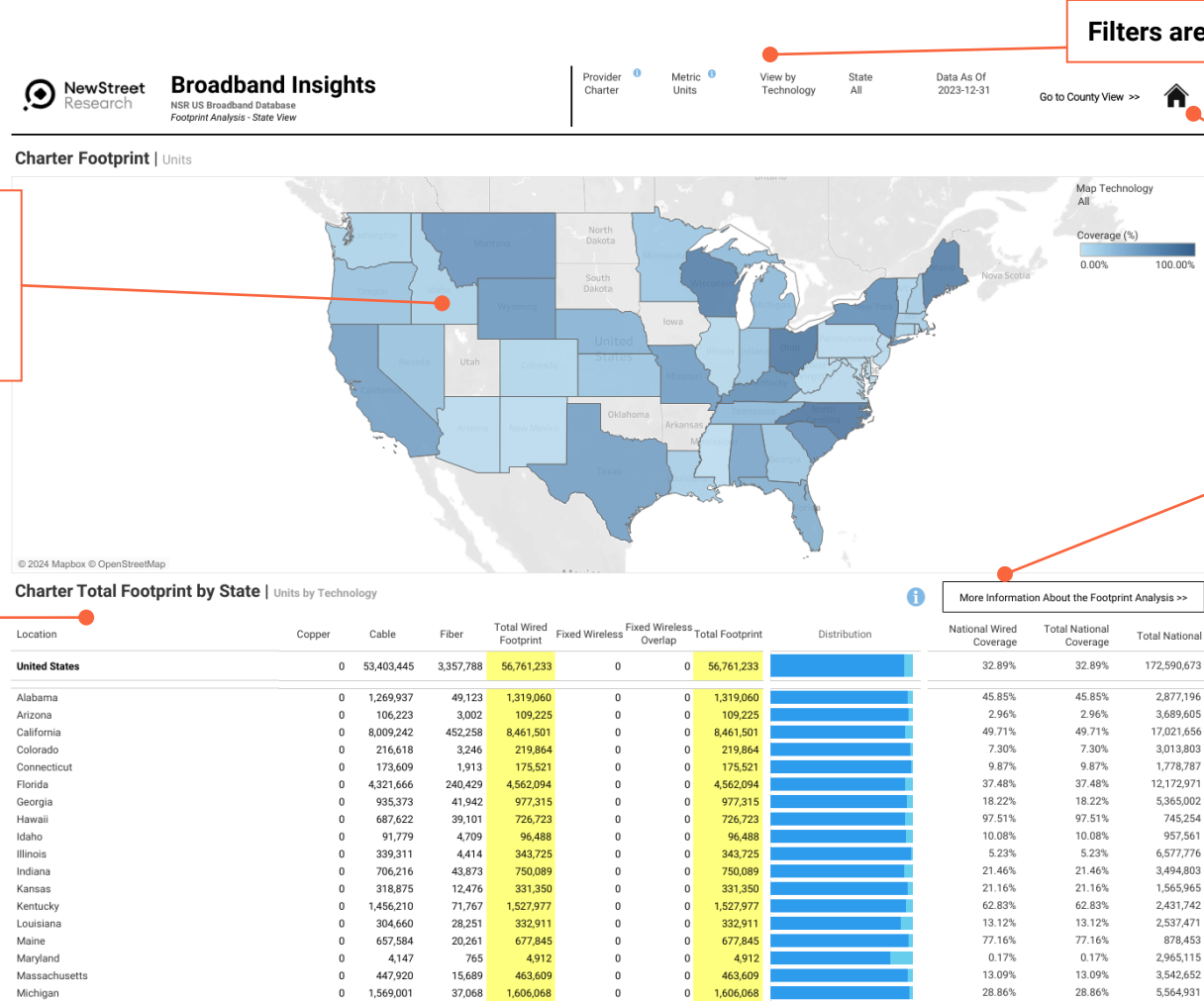
Filters area: Select the desired provider, metric and view

Go to County View for a more granular geographic view of the provider footprint

Map area: Highlight the states where the selected provider has presence, with additional information when one hovers the mouse over the map

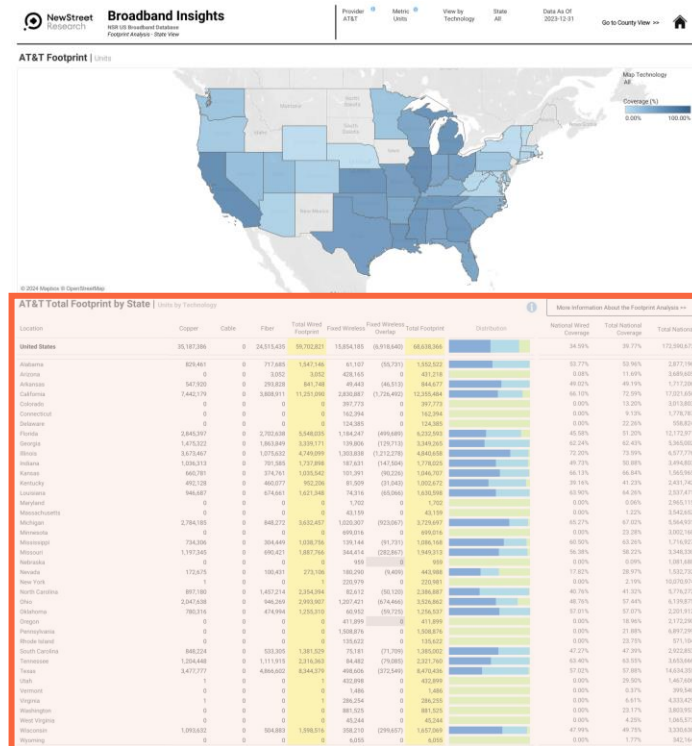
Additional information with important notes and comments about the analysis

Table with total footprint by state and additional details of technology and speed



Use Case: What's AT&T Fiber and Copper Footprint in the US?

As of December 31, 2023, AT&T has 24.5MM fiber passings and 35MM copper passings for a total of ~60MM wired locations, covering ~35% of total households and business locations in the US. California is the state with more passings, and Illinois has the greatest coverage. The primary data source for this is the FCC National Broadband Map database, supplemented with former FCC Form 477 and the NSR models. AT&T's total ILEC footprint is larger than the 60MM¹ we show here, but we believe AT&T does not report locations that do not meet the FCC's broadband definition².

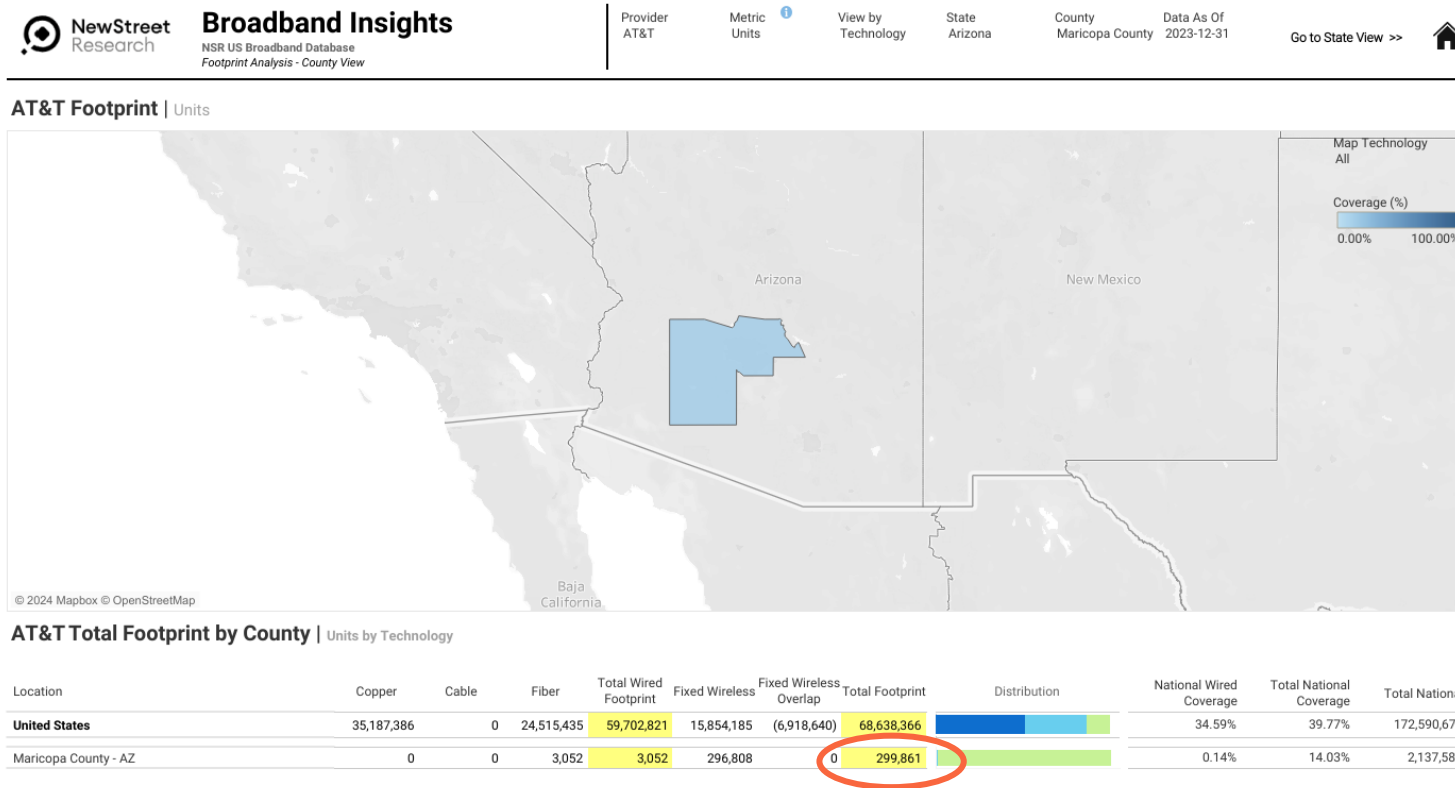


Note 1: AT&T's total footprint is estimated to be approximately ~75MM Units passed. We believe that the remaining 15 million gap consists of copper voice-only locations known as 'long loops' that were not reported to the FCC by AT&T as they did not meet the FCC's definition of broadband serviceable locations. We confirmed this hypothesis in conversations with AT&T

Note 2: According to the FCC, ISPs should report locations where broadband network infrastructure has been built out and where standard broadband internet service installation can be performed within 10 business days.

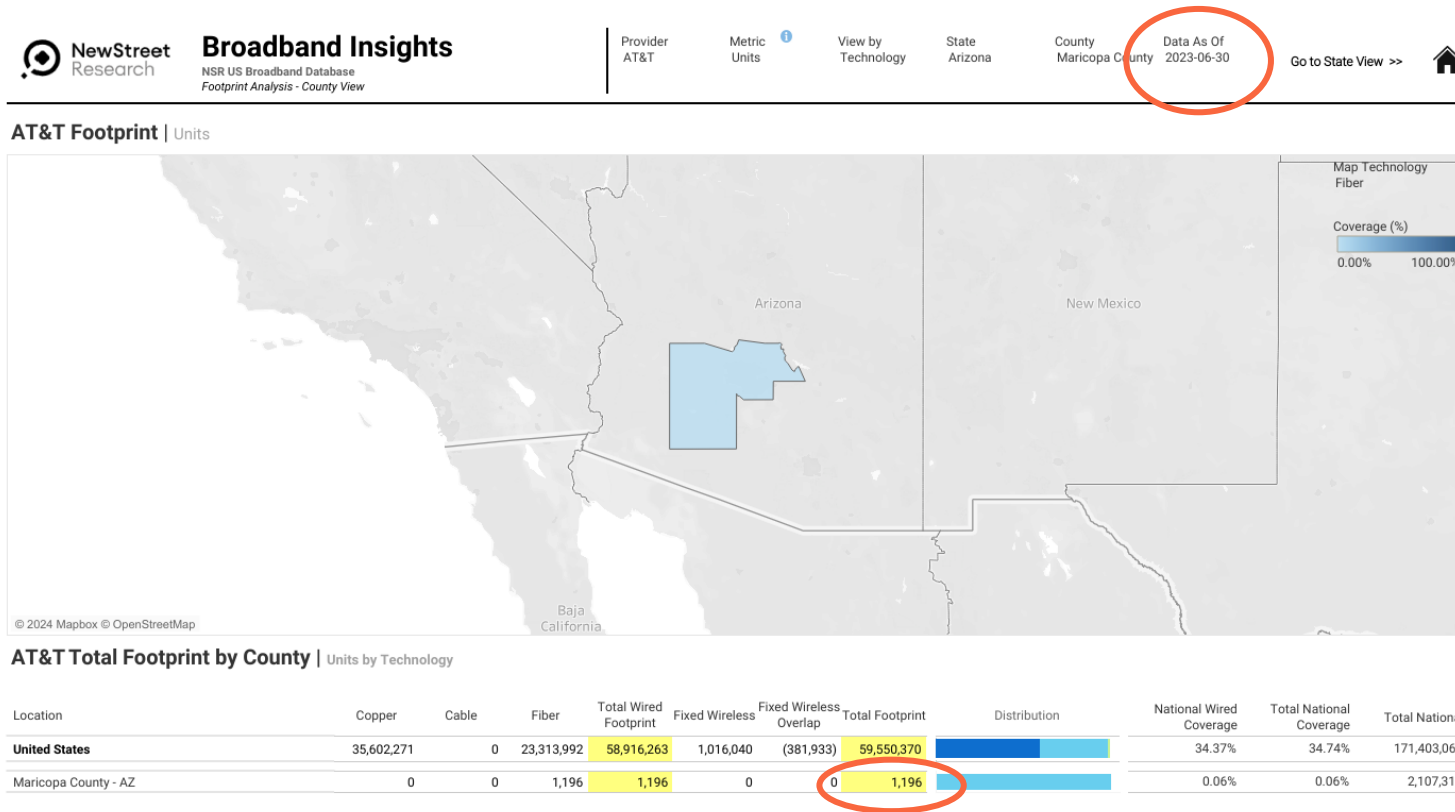
Use Case: What's AT&T Presence in Maricopa County, AZ?

As of December 31, 2023, AT&T has built ~3000 fiber passings in Maricopa County, AZ. By changing the “View By” filter to Speed, we see that all these locations have speeds of 1Gbps or more. Maricopa County is one of the largest Gigapower markets. Gigapower is the Joint Venture between AT&T and Blackrock announced in May 2023 to deploy gigabit-capable fiber in ~1.5MM locations across several markets in the US.



Use Case: How much fiber has deployed AT&T in Maricopa County, AZ in the last 6 months?

Thanks to the "Data As Of" filter, we can also examine AT&T's fiber location progress over time. As of June 30, 2023, there were about ~1,000 fiber passings in this region. Over the following six months, an additional ~2,000 locations were added in this market. For a more detailed analysis of Gigapower presence and its competitor that we conducted using our database, please click [here](#).

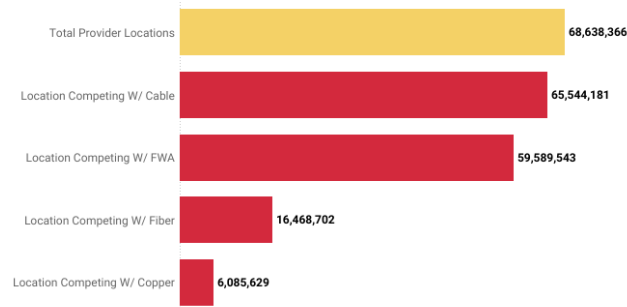


Section #2: Provider's Competitive Analysis (I)

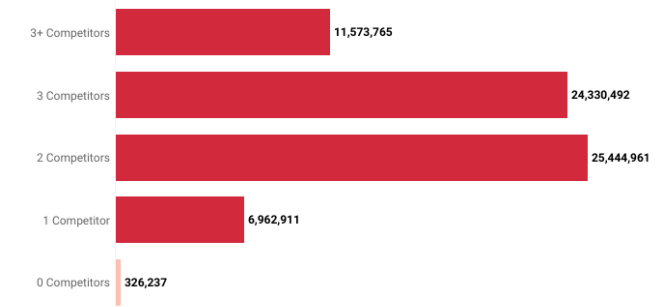
The Competitive Analysis section provides a deep dive into competitive dynamics between the top 25 fixed broadband providers. In this section, for any selected provider, you can 1) analyze the presence of competing technologies in the same locations; 2) identify the overlap between the selected provider and the top relevant competitors; and 3) assess the number of competing providers in a given area.

Competitive Overlap by Technology: Number of selected provider's locations competing with cable, copper, fiber and FWA

AT&T Competitive Overlap By Technology | Units by Competing Technology
Number of AT&T locations classified by competing technology



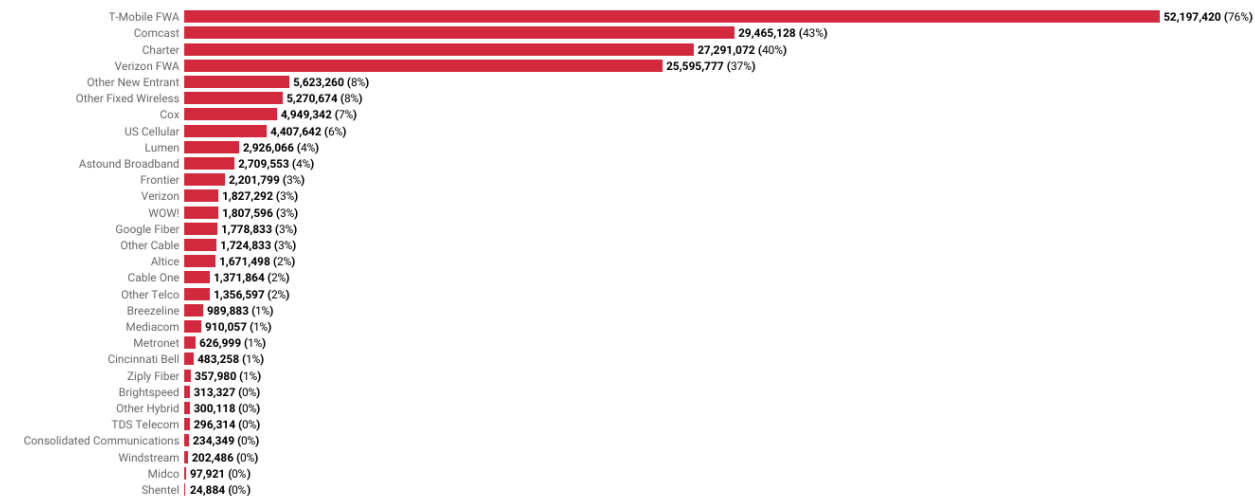
AT&T Competitive Intensity | Units by # of Competitors
Number of AT&T locations categorized by competitive scenario



Competitive Intensity: Number of selected provider's locations classified by number of existing competitors

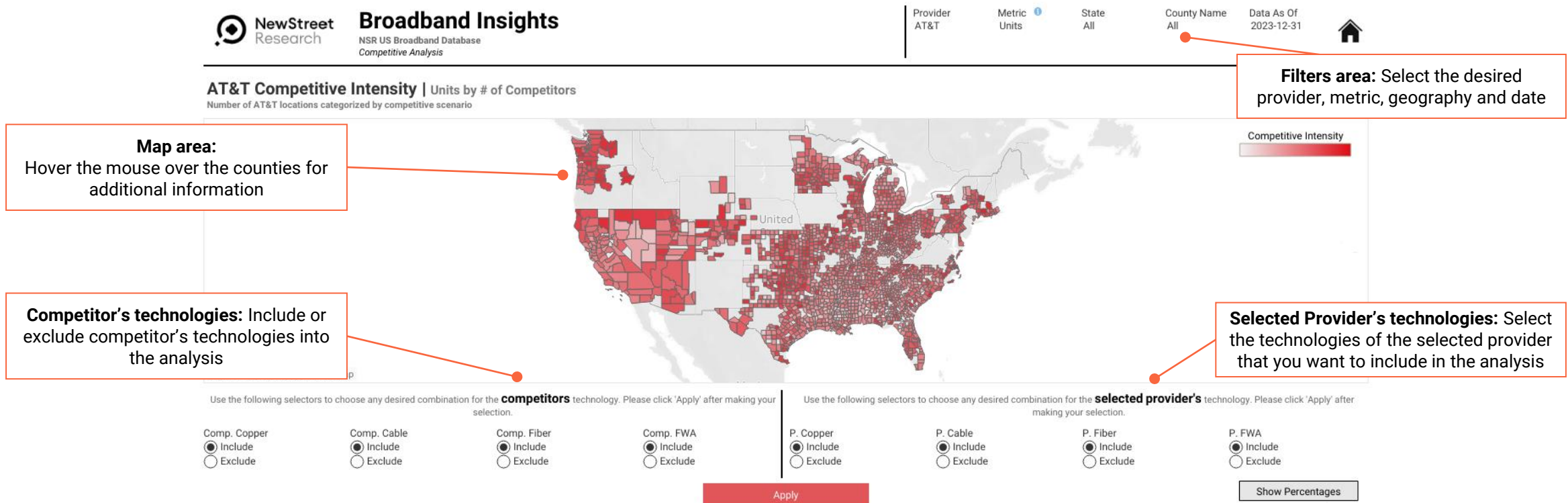
Competitive Overlap by Provider: Selected provider's top competitors and overlap

AT&T Competitive Overlap by Provider | Units
Number of AT&T locations classified by competing provider



Section #2: Provider's Competitive Analysis (II)

The Competitive Analysis allows us to consider different wired and FWA technologies across various geographic levels (national, state and county) for both the selected provider and the competitors.



NewStreet Research Broadband Insights
NSR US Broadband Database
Competitive Analysis

Provider: AT&T | Metric: Units | State: All | County Name: All | Data As Of: 2023-12-31

AT&T Competitive Intensity | Units by # of Competitors
Number of AT&T locations categorized by competitive scenario

Filters area: Select the desired provider, metric, geography and date

Map area: Hover the mouse over the counties for additional information

Competitor's technologies: Include or exclude competitor's technologies into the analysis

Selected Provider's technologies: Select the technologies of the selected provider that you want to include in the analysis

Use the following selectors to choose any desired combination for the **competitors** technology. Please click 'Apply' after making your selection.

- Comp. Copper: Include, Exclude
- Comp. Cable: Include, Exclude
- Comp. Fiber: Include, Exclude
- Comp. FWA: Include, Exclude

Use the following selectors to choose any desired combination for the **selected provider's** technology. Please click 'Apply' after making your selection.

- P. Copper: Include, Exclude
- P. Cable: Include, Exclude
- P. Fiber: Include, Exclude
- P. FWA: Include, Exclude

Apply | Show Percentages

Use Case: What's Charter's Overlap with Fiber and Fixed Wireless technologies?

According to **Broadband Insights**, Charter competes with Fiber technologies in 49% of their locations and with FWA technologies in 86% of their locations as of December 31, 2023.

Use the following selectors to choose any desired combination for the **competitors** technology. Please click 'Apply' after making your selection.

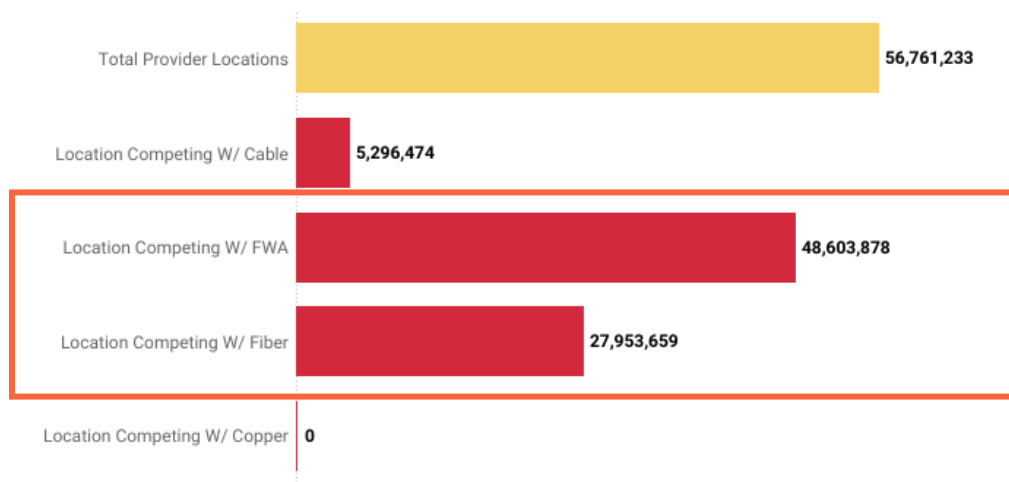
Use the following selectors to choose any desired combination for the **selected provider's** technology. Please click 'Apply' after making your selection.

Comp. Copper Include
 Comp. Copper Exclude
 Comp. Cable Include
 Comp. Cable Exclude
 Comp. Fiber Include
 Comp. Fiber Exclude
 Comp. FWA Include
 Comp. FWA Exclude

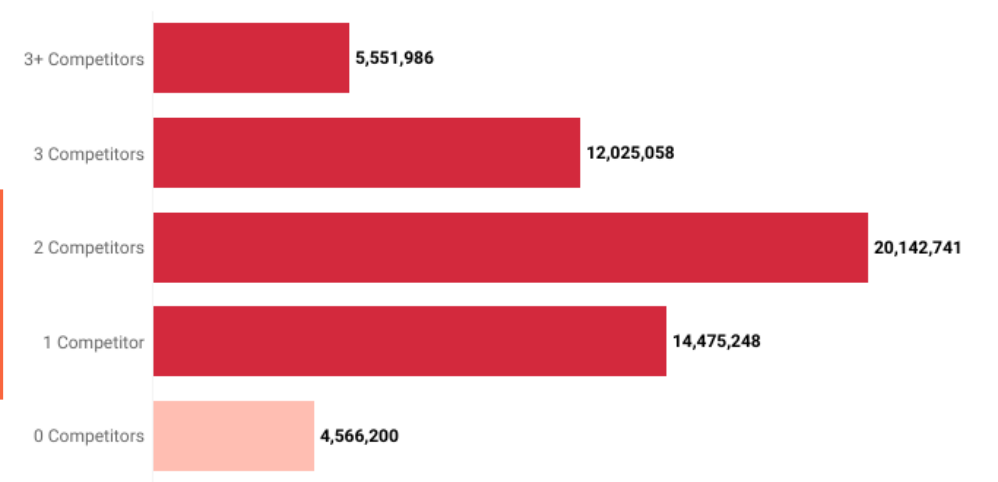
P. Copper Include
 P. Copper Exclude
 P. Cable Include
 P. Cable Exclude
 P. Fiber Include
 P. Fiber Exclude
 P. FWA Include
 P. FWA Exclude

Apply Show Percentages

Charter Competitive Overlap By Technology | Units by Competing Technology
 Number of Charter locations classified by competing technology

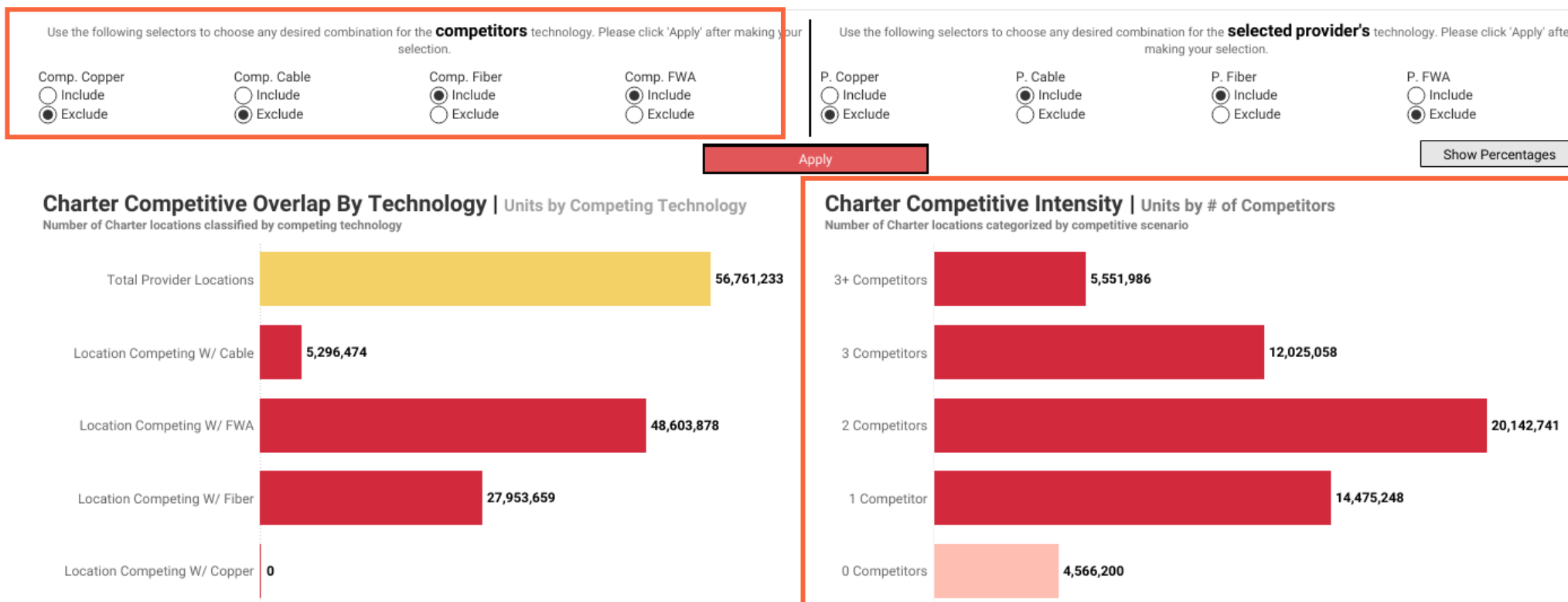


Charter Competitive Intensity | Units by # of Competitors
 Number of Charter locations categorized by competitive scenario



Use Case: How Many Fiber and FWA Competitors does Charter Face in Each Location?

Broadband Insights reveals that Charter has 4.5 million locations out of the ~57-million-unit footprint (8%) with no fiber or FWA competition, 15 millions with only one fiber or FWA competitor (26%) and the remaining 66% with two or more fiber or FWA competitors. We have details of competition at the national, state and county level in the tool, with more granular data upon request.

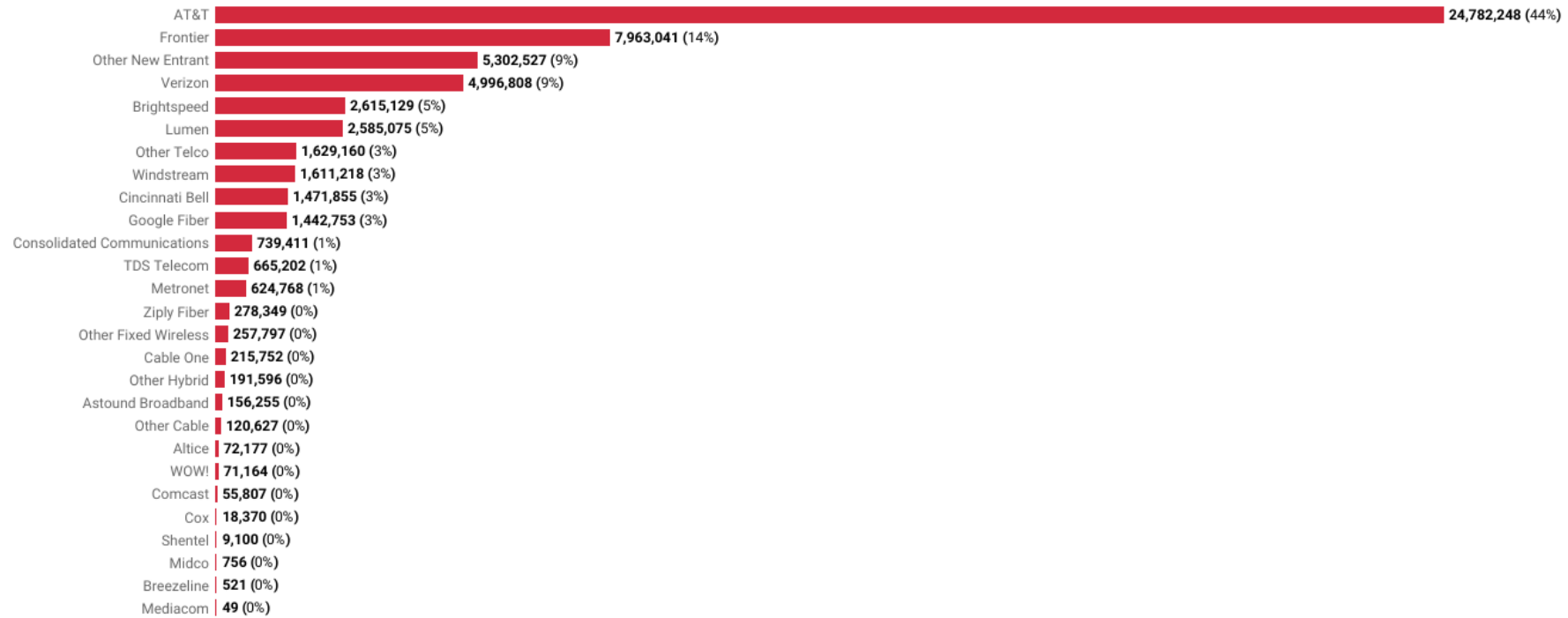


Use Case: What's Charter's Overlap with Telco Players?

According to **Broadband Insights**, ~25MM of Charter locations have also AT&T as a provider, ~8MM have Frontier and ~5MM have Verizon.

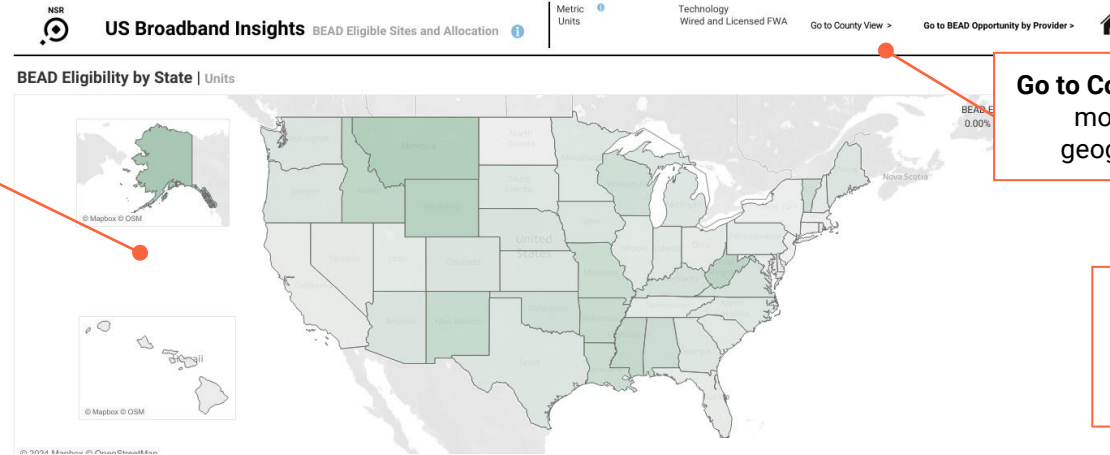
Charter Competitive Overlap by Provider | Units

Number of Charter locations classified by competing provider



Section #3: BEAD Analysis

The BEAD Analysis section of the **Broadband Insights** provides detailed insights into the Broadband Equity, Access, and Deployment (BEAD) program opportunities. In this section, you can 1) understand the allocation of BEAD funds across different geographic regions, 2) identify BEAD-eligible sites and the potential for fiber deployment.



Map area displaying BEAD eligible locations by state when hovering the mouse

Go to County View for a more granular geographic view

Table 1 with total BEAD eligible locations per state

Table 2 with total BEAD fund allocation and average subsidy per location & state

BEAD Eligibility By State Units	Unserv'd (w/o ISP) Locations	Unserv'd (with ISP) Locations	Underserved Locations	Served Locations	Total Locations	BEAD Eligible Locations	BEAD Eligible %	BEAD Eligible % of total	Distribution
United States	2,123,885	5,545,463	3,286,032	153,796,928	164,752,309	10,955,381	6.65%	100.00%	
Alabama	88,359	206,159	91,937	2,353,816	2,740,270	386,454	14.10%	3.53%	
Alaska	54,999	44,204	28,519	275,777	403,500	127,723	31.65%	1.17%	
American Samoa	0	9,729	2,497	0	12,226	12,226	100.00%	0.11%	
Arizona	54,975	104,233	142,826	3,212,752	3,514,786	302,034	8.59%	2.76%	
Arkansas	43,903	139,630	85,270	1,415,363	1,684,167	268,804	15.96%	2.45%	
California	132,127	224,870	163,981	15,700,946	16,221,924	520,978	3.21%	4.76%	
Colorado	53,985	97,651	95,785	2,606,621	2,854,042	247,421	8.67%	2.26%	
Connecticut	1,793	3,626	2,156	1,707,397	1,714,972	7,575	0.44%	0.07%	
Delaware	420	952	7,769	528,826	537,968	9,142	1.70%	0.08%	
District of Columbia	221	144	5	382,235	370	0	0.10%	0.00%	
Florida	68,283	210,256	112,462	10,966,081	11,357,081	391,000	3.44%	3.57%	
Georgia	58,845	204,076	99,058	4,740,657	5,102,635	361,978	7.09%	3.30%	
Guam	814	5,621	21,185	24,530	52,150	27,620	52.96%	0.25%	
Hawaii	5,172	4,546	1,360	602,917	613,994	11,077	1.80%	0.10%	
Idaho	41,970	92,799	46,578	735,533	916,881	181,348	19.78%	1.66%	
Illinois	43,066	203,535	106,042	5,913,811	6,266,454	352,643	5.63%	3.22%	
Indiana	32,318	132,245	58,904	3,172,601	3,396,068	223,467	6.58%	2.04%	
Iowa	6,170	70,330	68,461	1,578,801	1,723,762	144,961	1.32%	0.81%	
Kansas	12,432	67,575	48,882	1,414,756	1,543,645	128,889	8.35%	1.18%	
Kentucky	50,487	145,332	58,168	2,086,306	2,340,293	253,987	10.85%	2.32%	
Louisiana	93,810	178,661	91,651	2,056,770	2,420,892	364,122	15.04%	3.32%	
Maine	8,568	18,137	36,587	770,093	833,386	63,293	7.59%	0.58%	
Maryland	8,715	23,992	16,162	2,744,691	2,793,561	48,870	1.75%	0.45%	
Massachusetts	2,871	5,770	5,175	3,394,631	3,394,447	13,816	0.41%	0.13%	
Michigan	77,546	211,380	82,939	4,932,317	5,304,182	371,865	7.01%	3.39%	

BEAD Allocation by State USD	BEAD Allocation (\$)	Total Unserv'd Locations	% of the Total U.S.	Subsidy per Unserv'd Location	Subsidy per Unserv'd & Underserved Location	Adjusted BEAD Allocation (\$)	Adjusted Subsidy per Unserv'd Location	Adjusted Subsidy per Unserv'd & Underserved Locations (\$)
United States	\$41,601,000,000	7,669,348	100.00%	\$5,424	\$3,797	\$40,503,980,000	\$5,281	\$3,697
Alabama	\$1,401,221,902	294,517	3.37%	\$4,758	\$3,626	\$1,368,197,464	\$4,646	\$3,540
Alaska	\$1,017,139,672	99,204	2.44%	\$10,253	\$7,964	\$991,796,879	\$9,998	\$7,765
American Samoa	\$37,564,828	9,729	0.09%	\$3,861	\$3,073	\$35,563,531	\$3,656	\$2,909
Arizona	\$993,112,231	159,208	2.39%	\$6,238	\$3,288	\$968,249,987	\$6,082	\$3,206
Arkansas	\$1,024,303,994	183,534	2.46%	\$5,581	\$3,811	\$998,817,914	\$5,442	\$3,716
California	\$1,864,136,509	356,997	4.48%	\$5,222	\$3,578	\$1,821,853,779	\$5,103	\$3,497
Colorado	\$826,522,650	151,636	1.99%	\$5,451	\$3,341	\$804,992,197	\$5,309	\$3,254
Connecticut	\$144,180,793	5,418	0.35%	\$26,609	\$19,035	\$136,297,177	\$25,154	\$17,994
Delaware	\$107,748,385	1,372	0.26%	\$78,516	\$11,786	\$100,593,417	\$73,302	\$11,004
District of Columbia	\$100,694,787	365	0.24%	\$275,782	\$272,056	\$93,680,891	\$256,572	\$253,106
Florida	\$1,169,947,393	278,539	2.81%	\$4,200	\$2,992	\$1,141,548,445	\$4,098	\$2,920
Georgia	\$1,307,214,371	262,921	3.14%	\$4,972	\$3,611	\$1,276,070,084	\$4,853	\$3,525
Guam	\$156,831,734	6,435	0.38%	\$24,372	\$5,678	\$152,445,099	\$23,690	\$5,519
Hawaii	\$149,484,494	9,717	0.36%	\$15,383	\$13,495	\$141,494,804	\$14,561	\$12,774
Idaho	\$583,256,250	134,770	1.40%	\$4,328	\$3,216	\$566,591,125	\$4,204	\$3,124
Illinois	\$1,040,420,752	246,600	2.50%	\$4,219	\$2,950	\$1,014,612,336	\$4,114	\$2,877
Indiana	\$868,109,930	164,564	2.09%	\$5,275	\$3,885	\$845,747,731	\$5,139	\$3,785
Iowa	\$415,331,313	76,500	1.00%	\$5,429	\$2,865	\$402,024,687	\$5,255	\$2,773
Kansas	\$451,725,998	80,007	1.09%	\$5,646	\$3,505	\$437,691,478	\$5,471	\$3,396
Kentucky	\$1,086,172,537	195,819	2.61%	\$5,547	\$4,276	\$1,059,449,086	\$5,410	\$4,171
Louisiana	\$1,355,554,553	272,470	3.26%	\$4,975	\$3,723	\$1,323,443,462	\$4,857	\$3,635
Maine	\$271,977,723	26,705	0.65%	\$10,184	\$4,297	\$261,538,169	\$9,794	\$4,132

BEAD Opportunity by Provider

The BEAD Opportunity by Provider section provides a comprehensive analysis of how different providers can benefit from the Broadband Equity, Access, and Deployment (BEAD) program. In this section, you can 1) assess the BEAD-eligible locations specific to each provider; 2) analyze the potential opportunity for each provider; and 3) understand the potential funds that each provider can receive by geographic region.

Charter's BEAD Eligible Locations - Within and Outside of Footprint | Units

Show Optimistic Approach

	On Net Unserved Locations	On Net Underserved Locations	Total On Net BEAD Eligible Locations	Near Net Unserved Locations	Near Net Underserved Locations	Total Near Net BEAD Eligible Locations	Total BEAD Eligible Locations Conservative	Distribution
Alabama	0	0	0	28,765	9,593	38,357	38,357	
Arizona	0	0	0	448	1,072	1,521	1,521	
California	0	0	0	15,553	8,866	24,419	24,419	
Colorado	0	0	0	2,279	2,478	4,757	4,757	
Connecticut	0	0	0	458	79	536	536	
Florida	0	0	0	14,566	5,691	20,257	20,257	
Georgia	0	0	0	13,728				
Hawaii	0	1,011	1,011	3,132				
Idaho	0	0	0	2,625				
Illinois	0	0	0	1,966				
Indiana	0	0	0	5,818				
Kansas	0	0	0	470				
Kentucky	0	0	0	23,941				
Louisiana	0	0	0	11,830				
Maine	0	0	0	5,758				
Maryland	0	0	0	0				
Massachusetts	0	0	0	1,046				
Michigan	0	0	0	46,154				
Minnesota	0	0	0	3,352				
Mississippi	0	0	0	181				
Missouri	0	0	0	20,989				
Montana	0	0	0	8,089				
Nebraska	0	0	0	1,305				
Nevada	0	0	0	1,058				
New Hampshire	0	0	0	3,147				
New Jersey	0	0	0	20				
New Mexico	0	0	0	394				
New York	0	0	0	28,369				

Two scenarios: conservative and optimistic

Charter's BEAD Opportunity | Units

Show Optimistic Approach

	Expected On Net Unserved Locations	Expected On Net Underserved Locations	Expected On Net BEAD Eligible Locations	On Net Fair Share	Expected Near Net Unserved Locations	Expected Near Net Underserved Locations	Expected Near Net BEAD Eligible Locations	Near Net Fair Share	Total Provider Expected BEAD Eligible Locations	Distribution
Alabama	0	0	0		17,753	3,616	21,369	56%	21,369	
Arizona	0	0	0		179	373	552	36%	552	
California	0	0	0		10,564	3,120	13,684	56%	13,684	
Colorado	0	0	0		1,360	880	2,240	47%	2,240	
Connecticut	0	0	0		295	32	327	61%	327	
Florida	0	0	0		8,751	2,120	10,871	54%	10,871	
Georgia	0	0	0		7,830	2,400	10,231	50%	10,231	
Hawaii	0	958	958	95%	2,362	66	2,429	74%	3,387	
Idaho	0	0	0		1,438					
Illinois	0	0	0		1,132					
Indiana	0	0	0		3,190					
Kansas	0	0	0		309					
Kentucky	0	0	0		14,224					
Louisiana	0	0	0		8,444					
Maine	0	0	0		2,985					
Maryland	0	0	0		0					
Massachusetts	0	0	0		669					
Michigan	0	0	0		27,334					
Minnesota	0	0	0		1,830					
Mississippi	0	0	0		138					
Missouri	0	0	0		12,101					
Montana	0	0	0		3,919					
Nebraska	0	0	0		634					
Nevada	0	0	0		617					
New York	0	0	0		1,040,420,752					

Table 1 with total BEAD eligible locations within and outside of provider's footprint

Table 2 with total expected locations that that provider could win based on our fair market share estimates

Table 3 with total opportunity in dollars based on the average subsidy per location

Charter's BEAD Opportunity (\$) | Units

Show Optimistic Approach

	BEAD Allocation by State (\$)	BEAD Eligible Locations	Adjusted BEAD Allocation (\$)	Adjusted BEAD Subsidy per Unserved + Underserved Locations (\$)	Provider Total Expected BEAD Eligible Locations	Fair Share (%)	Total Conservative Opportunity
Alabama	\$1,401,221,902	386,454	\$1,368,197,464	\$3,540	21,369	55.71%	\$75,653,443
Arizona	\$993,112,231	302,034	\$968,249,987	\$3,206	552	36.29%	\$1,769,451
California	\$1,864,136,509	520,978	\$1,821,853,779	\$3,497	13,684	56.04%	\$47,854,435
Colorado	\$826,522,650	247,421	\$804,992,197	\$3,254	2,240	47.09%	\$7,288,833
Connecticut	\$144,180,793	7,575	\$136,297,177	\$17,994	327	61.08%	\$5,892,614
Florida	\$1,169,947,393	391,000	\$1,141,548,445	\$2,920	10,871	53.66%	\$31,737,151
Georgia	\$1,307,214,371	361,978	\$1,276,070,084	\$3,525	10,231	50.26%	\$36,065,650
Hawaii	\$149,484,494	11,077	\$141,494,804	\$12,774	3,387	78.73%	\$43,262,250
Idaho	\$583,256,250	181,348	\$566,591,125	\$3,124	1,586	52.08%	\$4,955,304
Illinois	\$1,040,420,752	352,643	\$1,014,612,336	\$2,877	1,690	47.34%	\$4,862,017
Indiana	\$868,109,930	223,467	\$845,747,731	\$3,785	4,228	50.22%	\$16,000,768
Kansas	\$451,725,998	128,889	\$437,691,478	\$3,396	380	56.44%	\$1,289,836
Kentucky	\$1,086,172,537	253,987	\$1,059,449,086	\$4,171	16,659	54.94%	\$69,487,430
Louisiana	\$1,355,554,553	364,122	\$1,323,443,462	\$3,635	9,422	65.27%	\$34,245,867
Maine	\$271,977,723	63,293	\$261,538,169	\$4,132	4,945	40.20%	\$20,432,336
Maryland	\$267,738,401	48,870	\$257,383,633	\$5,267	216	36.14%	\$1,138,904
Massachusetts	\$147,422,464	13,816	\$139,474,015	\$10,095	888	51.31%	\$8,967,547
Michigan	\$1,559,362,479	371,865	\$1,523,175,230	\$4,096	31,334	55.47%	\$128,347,522
Minnesota	\$651,839,368	212,741	\$633,802,581	\$2,979	2,790	47.05%	\$8,310,644
Mississippi	\$1,203,561,563	287,396	\$1,174,490,332	\$4,087	146	72.44%	\$595,678
Missouri	\$1,736,302,708	492,831	\$1,696,576,654	\$3,443	14,976	51.76%	\$51,556,375
Montana	\$628,973,799	178,531	\$611,394,323	\$3,425	5,192	44.30%	\$17,780,837
Nebraska	\$405,281,070	92,419	\$392,175,449	\$4,243	875	41.48%	\$3,712,527

Use Case: What's BEAD Opportunity for Frontier (Conservative Scenario)



Frontier can compete for 1.2MM BEAD-eligible locations in a conservative scenario. These include both unserved and underserved locations within their footprint as well as locations outside of their footprint that are within the same census block where they currently have presence. Given the competitive intensity of these areas, we estimate that Frontier could secure 0.8MM BEAD locations (65%). With an average subsidy of ~\$4,000 per location, this opportunity could amount to ~\$3BN.

BEAD Opportunity (\$) | Units

	Total BEAD Allocation	Total Adjusted BEAD Allocation Amount	Total BEAD Eligible Locations	Adjusted Average Subsidy per BEAD Eligible Location	BEAD View Opportunity (\$)	Approach Conservative		
					Total Provider BEAD Eligible Locations	Total Provider Expected BEAD Locations	Provider Fair Market Share	Total Provider Opportunity (\$)
Total	\$27,275,517,854	\$26,595,007,497	7,377,772	\$3,864	1,210,898	816,207	67.41%	\$3,153,536,562
Alabama	\$1,401,221,902	\$1,368,197,464	386,454	\$3,540	15,669	11,567	73.82%	\$40,951,878
Arizona	\$993,112,231	\$968,249,987	302,034	\$3,206	48,387	35,075	72.49%	\$112,442,236
California	\$1,864,136,509	\$1,821,853,779	520,978	\$3,497	115,004	81,363	70.75%	\$284,526,414
Connecticut	\$144,180,793	\$136,297,177	7,575	\$17,994	5,825	4,034	69.26%	\$72,588,345
Florida	\$1,169,947,393	\$1,141,548,445	391,000	\$2,920	8,832	5,909	66.91%	\$17,252,954
Georgia	\$1,307,214,371	\$1,276,070,084	361,978	\$3,525	2,516	1,527	60.68%	\$5,381,329
Illinois	\$1,040,420,752	\$1,014,612,336	352,643	\$2,877	178,191	107,581	60.37%	\$309,528,725
Indiana	\$868,109,930	\$845,747,731	223,467	\$3,785	70,719	49,481	69.97%	\$187,269,788
Iowa	\$415,331,313	\$402,024,687	144,961	\$2,773	6,636	3,445	51.91%	\$9,552,811
Michigan	\$1,559,362,479	\$1,523,175,230	371,865	\$4,096	105,227	72,176	68.59%	\$295,634,911
Minnesota	\$651,839,368	\$633,802,581	212,741	\$2,979	41,268	26,166	63.40%	\$77,953,194
Mississippi	\$1,203,561,563	\$1,174,490,332	287,396	\$4,087	248	217	87.51%	\$888,228
Nebraska	\$405,281,070	\$392,175,449	92,419	\$4,243	6,866	3,593	52.34%	\$15,247,932
Nevada	\$416,666,230	\$403,332,905	58,275	\$6,921	8,347	5,752	68.92%	\$39,813,435
New Jersey	\$263,689,549	\$253,415,758	18,271	\$13,870	1	0	33.33%	\$4,623
New Mexico	\$675,372,312	\$656,864,866	187,586	\$3,502	4,000	2,156	53.89%	\$7,547,997
New York	\$664,618,251	\$646,325,886	92,075	\$7,020	25,671	19,322	75.27%	\$135,631,010
North Carolina	\$1,532,999,481	\$1,497,339,492	368,657	\$4,062	51,822	38,952	75.16%	\$158,205,544
Ohio	\$793,688,108	\$772,814,345	241,052	\$3,206	86,871	60,414	69.54%	\$193,689,003
Pennsylvania	\$1,161,778,272	\$1,133,542,707	279,676	\$4,053	40,199	27,630	68.73%	\$111,987,716
South Carolina	\$551,535,983	\$535,505,263	149,786	\$3,575	3,739	2,264	60.54%	\$8,093,097
Tennessee	\$813,319,680	\$792,053,287	173,405	\$4,568	9,251	6,066	65.57%	\$27,707,112
Texas	\$3,312,616,455	\$3,241,364,126	1,054,319	\$3,074	77,733	46,762	60.16%	\$143,763,976
Utah	\$317,399,742	\$306,051,747	66,898	\$4,575	4,160	3,123	75.08%	\$14,288,721
Virginia	\$1,481,489,573	\$1,446,859,781	382,651	\$3,781	40	27	68.92%	\$103,443
West Virginia	\$1,210,800,970	\$1,181,584,950	220,065	\$5,369	182,693	134,654	73.70%	\$722,989,973
Wisconsin	\$1,055,823,574	\$1,029,707,102	429,544	\$2,397	110,983	66,950	60.32%	\$160,492,168

Use Case: What's BEAD Opportunity for Frontier (Optimistic Scenario)

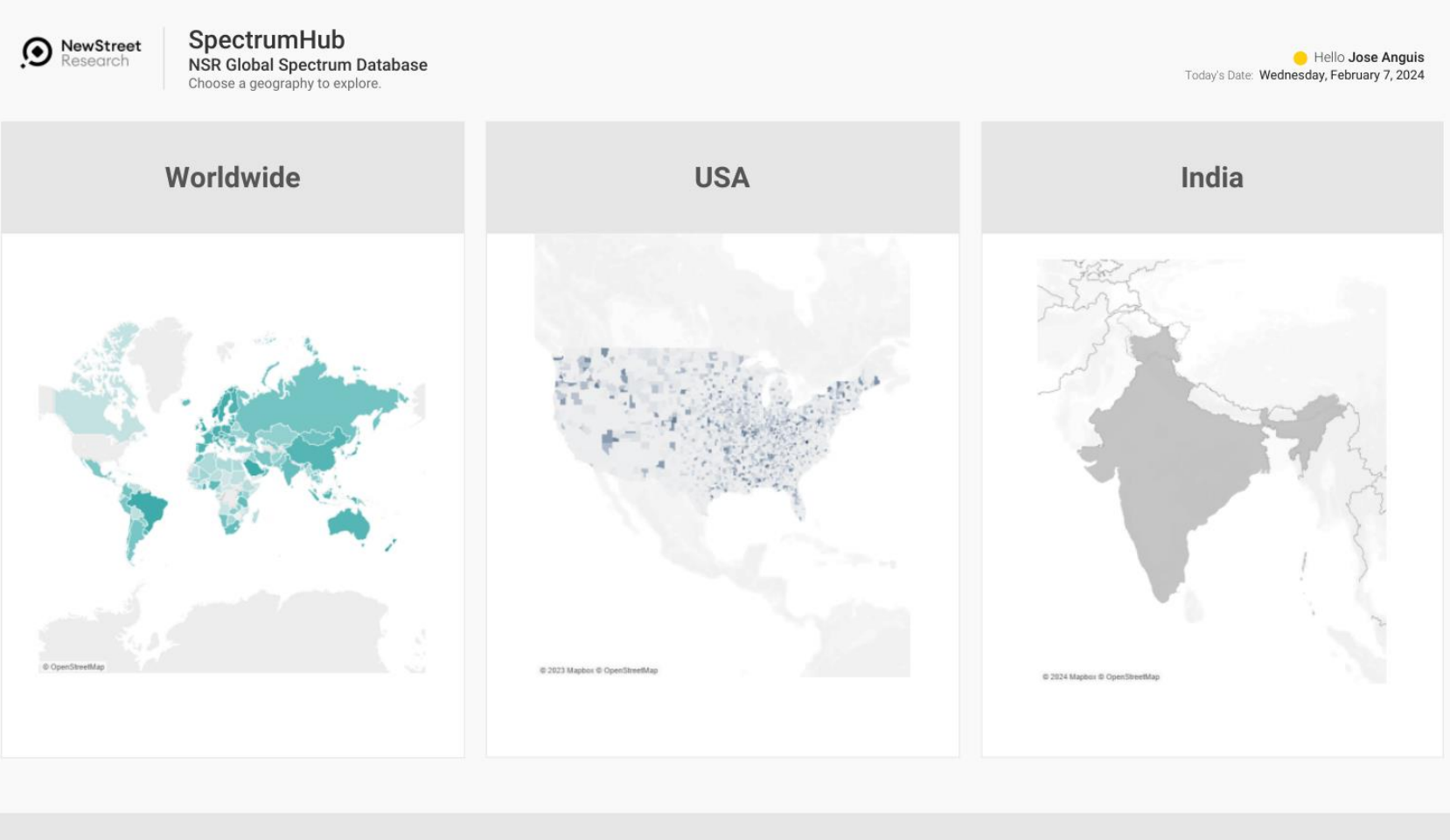


In a more optimistic scenario, Frontier can compete for ~7MM BEAD-eligible locations. These include both unserved and underserved locations within their footprint as well as locations outside of their footprint that are within the same state where they currently have presence. Given the competitive intensity of these areas, we estimate that Frontier could secure 1.2MM BEAD locations (18%). With an average subsidy of ~\$3,900 per location, this opportunity could amount to ~\$4.8BN.

	BEAD Opportunity (\$) Units				BEAD View Opportunity (\$)	Approach Optimistic	i	
	Total BEAD Allocation	Total Adjusted BEAD Allocation Amount	Total BEAD Eligible Locations	Adjusted Average Subsidy per BEAD Eligible Location	Total Provider BEAD Eligible Locations	Total Provider Expected BEAD Locations		Provider Fair Market Share
Total	\$27,612,908,193	\$26,915,650,029	7,423,593	\$3,721	7,423,593	1,317,219	17.74%	\$4,901,853,260
Alabama	\$1,401,221,902	\$1,368,197,464	386,454	\$3,540	386,454	14,037	3.79%	\$51,822,338
Arizona	\$993,112,231	\$968,249,987	302,034	\$3,206	302,034	44,754	14.82%	\$143,470,876
California	\$1,864,136,509	\$1,821,853,779	520,978	\$3,497	520,978	161,229	30.95%	\$563,815,944
Connecticut	\$144,180,793	\$136,297,177	7,575	\$17,994	7,575	5,536	73.09%	\$99,615,422
Florida	\$1,169,947,393	\$1,141,548,445	391,000	\$2,920	391,000	74,216	18.98%	\$216,678,395
Georgia	\$1,307,214,371	\$1,276,070,084	361,978	\$3,525	361,978	2,942	0.81%	\$10,372,952
Illinois	\$1,040,420,752	\$1,014,612,336	352,643	\$2,877	352,643	131,127	37.18%	\$377,273,781
Indiana	\$868,109,930	\$845,747,731	223,467	\$3,785	223,467	85,202	38.13%	\$322,459,524
Iowa	\$415,331,313	\$402,024,687	144,961	\$2,773	144,961	7,176	4.95%	\$19,900,512
Michigan	\$1,559,362,479	\$1,523,175,230	371,865	\$4,096	371,865	105,802	28.45%	\$433,370,141
Minnesota	\$651,839,368	\$633,802,581	212,741	\$2,979	212,741	41,068	19.30%	\$122,350,726
Mississippi	\$1,203,561,563	\$1,174,490,332	287,396	\$4,087	287,396	1,348	0.47%	\$5,506,984
Nebraska	\$405,281,070	\$392,175,449	92,419	\$4,243	92,419	7,604	8.23%	\$32,268,900
Nevada	\$416,666,230	\$403,332,905	58,275	\$6,921	58,275	7,326	12.57%	\$50,703,599
New Jersey	\$263,689,549	\$253,415,758	18,271	\$13,870	18,271	0	0.00%	\$4,682
New Mexico	\$675,372,312	\$656,864,866	187,586	\$3,502	187,586	2,676	1.43%	\$9,370,377
New York	\$664,618,251	\$646,325,886	92,075	\$7,020	92,075	24,069	26.14%	\$168,956,099
North Carolina	\$1,532,999,481	\$1,497,339,492	368,657	\$4,062	368,657	54,826	14.87%	\$222,681,180
North Dakota	\$130,162,815	\$122,559,559	7,049	\$17,387	7,049	0	0.00%	\$5,446
Ohio	\$793,688,108	\$772,814,345	241,052	\$3,206	241,052	79,472	32.97%	\$254,788,815
Pennsylvania	\$1,161,778,272	\$1,133,542,707	279,676	\$4,053	279,676	39,409	14.09%	\$159,728,619
South Carolina	\$551,535,983	\$535,505,263	149,786	\$3,575	149,786	11,629	7.76%	\$41,574,587
South Dakota	\$207,227,524	\$198,082,973	38,772	\$5,109	38,772	2	0.00%	\$9,547
Tennessee	\$813,319,680	\$792,053,287	173,405	\$4,568	173,405	10,936	6.31%	\$49,950,683
Texas	\$3,312,616,455	\$3,241,364,126	1,054,319	\$3,074	1,054,319	131,380	12.46%	\$403,910,169
Utah	\$317,399,742	\$306,051,747	66,898	\$4,575	66,898	4,032	6.03%	\$18,445,639
Virginia	\$1,481,489,573	\$1,446,859,781	382,651	\$3,781	382,651	42	0.01%	\$158,982
West Virginia	\$1,210,800,970	\$1,181,584,950	220,065	\$5,369	220,065	160,948	73.14%	\$864,167,482
Wisconsin	\$1,055,823,574	\$1,029,707,102	429,544	\$2,397	429,544	107,830	25.10%	\$258,490,859

New Street Research is expanding its Data Analytics product suite

Broadband Insights sits alongside [SpectrumHub](#) in our data analytics products suite. **SpectrumHub**, our global spectrum database launched a few months ago, provides unique and detailed information on spectrum holdings and value.



The screenshot displays the SpectrumHub interface. At the top left is the NewStreet Research logo. The main header reads "SpectrumHub NSR Global Spectrum Database" with the instruction "Choose a geography to explore." On the top right, a user greeting says "Hello Jose Anguis" and the date is "Wednesday, February 7, 2024". Below the header are three panels, each with a geographical view:

- Worldwide:** A world map with various regions highlighted in shades of teal and green.
- USA:** A map of the United States with numerous small blue dots representing data points across the country.
- India:** A map of India with a dark grey shaded area representing the country's geographical outline.

Each map panel includes a small copyright notice at the bottom: "© OpenStreetMap" for the Worldwide view, and "© 2023 Mapbox © OpenStreetMap" for both the USA and India views.

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