

EBS WHITESPACE AUCTION OPPORTUNITIES TOOL

Product Guide

Figure 10: Population View for Kanawha & Putnam counties, West Virginia

Auction Channel		1st Channel									
Existing Bandplan		A1	A2	A3	B1	B2	B3	C1	C2	C3	Total MHz-POPs
Channel Bandwidth (MHz)		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	49.5
St	County										
WV	Kanawha County	193,063	193,063	193,063	193,063	193,063	193,063	193,063	193,063	193,063	9,556,619
WV	Putnam County	55,486	55,486	55,486	55,486	55,486	55,486	55,486	55,486	55,486	2,746,557

For example, for two counties in West Virginia, the whitespace area matches the county boundary for the entirety of EBS Auction Channel 1 (figures 7 & 8). This is clearly demonstrated using Population Percentage View (figure 9), which shows that 100% of the total county population falls in the whitespace area for each of the sub-channels that make up EBS Auction Channel 1. To make this more apparent, we employ a "heat chart" format where channels with lower available population% are indicated in red, while high available population% are green. Accordingly, Kanawha and Putnam counties are both highlighted in green across Auction Channel 1. The implication of this data is that the available whitespace population in these counties is equal to the county population and the winning bidder will have access to the entire EBS Auction Channel 1 (49.5 MHz) over the entire county population.

The exact number of people that channel 1 would be able to reach, if licensed, can be evaluated using Population View, which shows the actual whitespace population for each county, along with the total MHz-POPs available for EBS Auction Channel 1 (figure 10). In Kanawha County, the total population is 193,063 x 49.5MHz (channel 1 width), resulting in 9,556,619 MHz-POPs.

In some counties, the unlicensed area will be different for several of the sub-channels. In Douglas County, Nevada, the amount of available whitespace for Auction Channel 1 ranges from 4% (red) to 93% (green) of the total county population. Accordingly, the winning bidder for Auction Channel 1 in Douglas County could use the 5.5MHz B2 channel to reach 93% of the county population with a wireless signal.

Figure 11: Population Percentage View for Douglas County, Nevada

Auction Channel		1st Channel										Total MHz-POPs
Existing Bandplan		A1	A2	A3	B1	B2	B3	C1	C2	C3	%Total MHz-POPs	
Channel Bandwidth (MHz)		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	49.5	
St	County											
NV	Douglas County	4%	10%	4%	4%	93%	4%	4%	4%	4%	15%	344,982

Figure 12: Population View for Douglas County, Nevada

Auction Channel		1st Channel										Total MHz-POPs
Existing Bandplan		A1	A2	A3	B1	B2	B3	C1	C2	C3		
Channel Bandwidth (MHz)		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	49.5	
St	County											
NV	Douglas County	2,024	4,684	2,024	2,024	43,872	2,024	2,024	2,024	2,024	344,982	

In Population View, the raw population counts in each sub-channel's whitespace area are shown, along with the total MHz-POPs for the entire auction channel. Looking at the B2 sub-channel in Douglas County, one is able to determine that over 43,000 people could be served with a 5.5MHz wireless signal on this sub-channel.

Figure 13: The unlicensed area for the B2 sub-channel, accounting for 93% of the total population in Douglas County

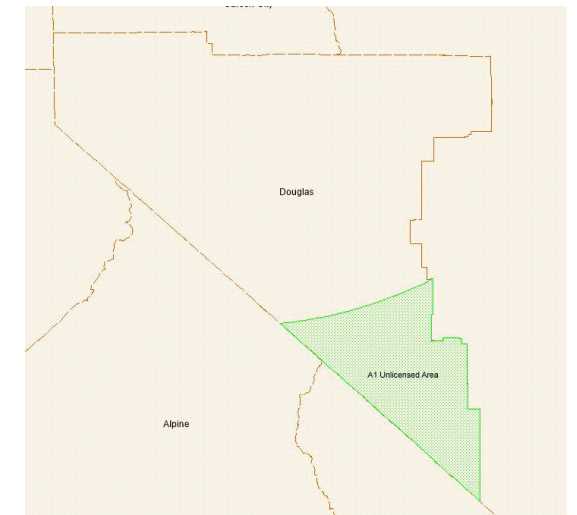
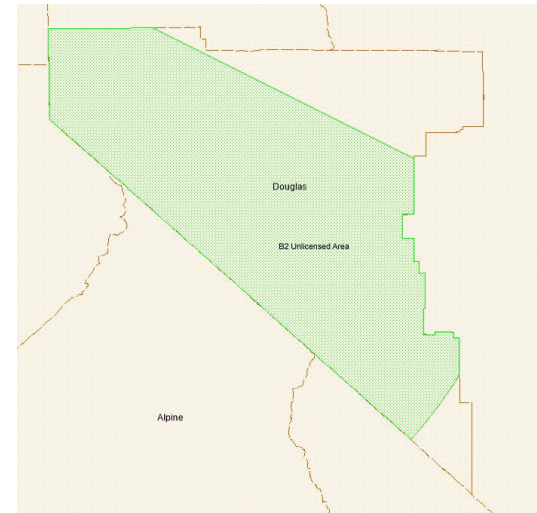


Figure 14: The unlicensed area for the A1 sub-channel, accounting for 4% of the total population in Douglas County

WHITESPACE AREA MAPPING

To accurately represent whitespace areas geographically at a county-by-county level, we have added an EBS Auction section to our Web Spectrum Viewer tool. In this section, you will see a similar population view and population percentage view as the Excel tool. In the web view, the user has the ability to select individual sub-channels by clicking the corresponding cells. This will reveal the whitespace area for that specific sub-channel represented visually. Here, a user can gain important insight to more accurately evaluate the available whitespace in that county. Cities, roads, and other landmarks are clearly identified on our Whitespace Area Mapping tool, making it easy to determine whether or not they fall within the available unlicensed areas.

Figure 15: Population Percentage View for Douglas County as seen on the Web Spectrum Viewer

St	County	CCType	_EBSA1	_EBSA2	_EBSA3	_EBSB1	_EBSB2	_EBSB3
NV	Douglas County	FDM_Future	4%	9%	4%	4%	93%	4%

Figure 15.1: Unlicensed area for the B2 sub-channel as seen on the Whitespace Area Mapping tool; found by selecting the B2 sub-channel cell for Douglas County on the Web Spectrum Viewer

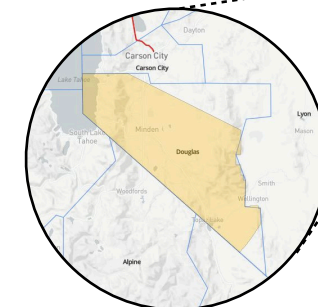


Figure 16: Population View for Douglas County as seen on the Web Spectrum Viewer

St	County	CCType	EBSA1	EBSA2	EBSA3	EBSB1	EBSB2	EBSB3
NV	Douglas County	FDM_Future	2,024	4,684	2,024	2,024	43,872	2,024

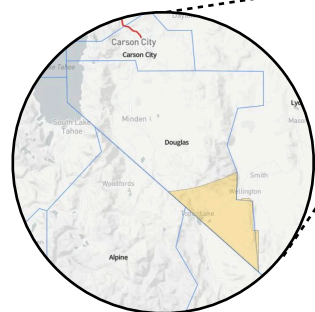


Figure 16.1: Unlicensed area for the A1 sub-channel as seen on the Whitespace Area Mapping tool; found by selecting the A1 sub-channel cell for Douglas County on the Web Spectrum Viewer

ADDITIONAL MAPPING FILES

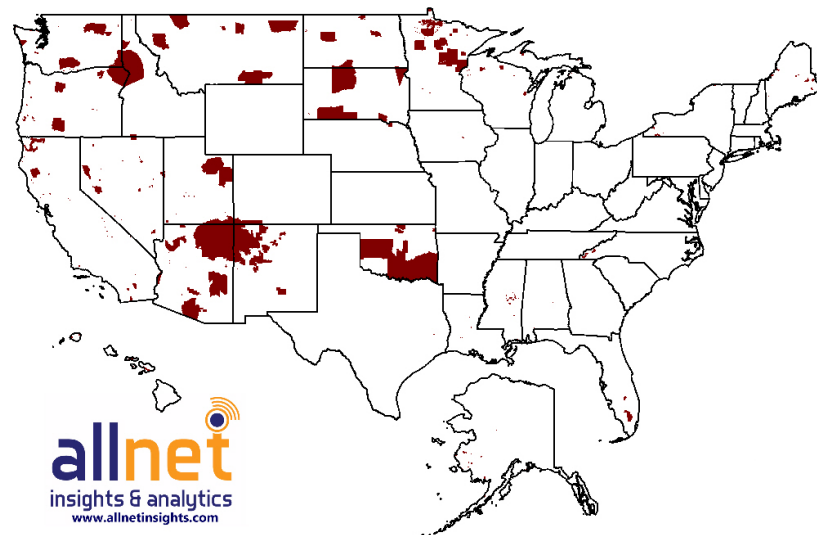
In addition to geographic mapping through our Web Spectrum Viewer, we are also providing MapInfo TAB files and Google Earth KMZ files as part of each one-time subscription. This would allow the user to utilize these mapping layers in conjunction with their internal infrastructure data.

TRIBAL LAND LICENSES

Before the EBS Whitespace Auction goes live, first priority for this spectrum has gone to Native American Tribes to access the whitespace spectrum overlapping with their tribal lands. Each tribe is required to submit an official FCC application to acquire this spectrum, and new Tribal Land licenses are being granted periodically. The information regarding individual Tribal Land licenses will be included in our Whitespace Auction Opportunities Tool. However, as this process is still ongoing, these newly licensed tribal areas are not yet removed from the overall whitespace area on our tool. Once all tribal licenses are finalized by the FCC, our geographic files and our Whitespace Population tools will be updated and made available to all Whitespace Tool users.

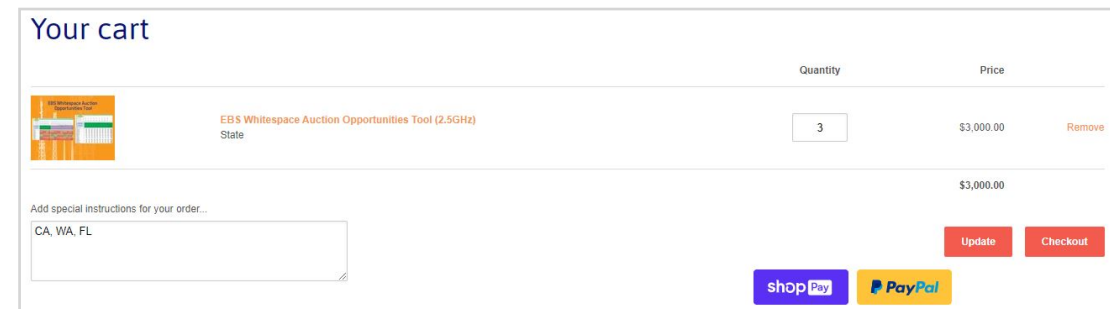
We will provide the tribal lands overlay (see below) as new applications are finalized by the FCC, so the effect of the tribal licenses can be predicted as things progress.

Tribal Boundaries Announced Through November 10, 2020



PURCHASING

The EBS Whitespace Opportunities Tool is available for purchase in two different versions: a national version with all fifty states and US territories, or a specific state-by-state version. In the state-by-state version, you will have the ability to specify as many states as you would like. On our website, simply select the State version of this product, then specify the number of states you'd like to purchase in the quantity field provided. On your way to check out, you will be given the option to "add special instructions." In the corresponding text box, indicate exactly which states you want included in your one-time subscription.



The EBS Whitespace Opportunities Tool is delivered by download from a cloud service. A link for this download will be provided after your payment is confirmed. Typically you will have access to the data within the same business day of your payment being processed.

All purchases are corporate subscriptions, which allow any employee within the same email domain to utilize the data and request access to the Web Spectrum Viewer.

To schedule a video demonstration, email info@allnetinsights.com or call (425) 522-2142.

PRICING

VERSION	ONE-TIME PRICE
National (all US States + territories)	\$10,000
State-by-State	\$1,000 / per state

Purchases can be made through our [website](http://www.allnetinsights.com) or by emailing us at info@allnetinsights.com.