WV Broadband Enhancement Council
Meeting Agenda / Minutes

Meeting Title	WV Broadband Enhancement Council Meeting – Provider Presentation Day		
Chairperson	Robert Hinton		
Date	02/09/2017	**Location**	BridgeValley Community & Tech College; Room ATC132 1201 Science Park Drive South Charleston, WV 25303
Time	9:00 am		
Audio connection	304.957.6999 Conf. ID: 5151283		

	Council Member	Representing		Council Member	Representing
P	Robert Hinton, Chairman	Rural Business User Congressional Dist. 2	P	Woody Thrasher	Dept. of Commerce, Cabinet Secretary
P	Robert Morris, Vice Chairman	Urban Residential User	–	John Dunlap	Office of Technology, Chief Technology Officer
–	Vacant Secretary/Treasurer	Urban Business User	–	Michael J. Martirano	Dept. of Education, State Superintendent
P	Robert Cole	Rural Residential User Congressional Dist. 1	–	Matt Turner	Higher Education Policy Comm., Exec. Vice Chancellor
–	Michael Shaffer	Rural Residential User Congressional Dist. 2	–	Vacant	WV Senate (Dem. Party) (ex-officio/non-voting member)
P	R.A. "Pete" Hobbs	Rural Residential User Congressional Dist. 3	–	Vacant	WV Senate (Rep. Party) (ex-officio/non-voting member)
–	John Reasback	Rural Business User Congressional Dist. 1	–	Vacant	WV House (Dem. Party) (ex-officio/non-voting member)
P	Michael J. Holstine	Rural Business User Congressional Dist. 3	–	Vacant	WV House (Rep. Party) (ex-officio/non-voting member)
–	Brittany Carns	Business User of Large Amounts of Broadband	P	Josh Jarrell	Representing Woody Thrasher
P	Dr. Jack Smith	Representing Matt Turner	P	Brenda Morris	Representing Michael Martirano

P = Present; TC = Teleconference; VC = Videoconference; _ = Absent

Agenda (Topics and Minutes)

Topic	Details/Minutes
Opening Remarks and Roll Call	Robert Cole welcomed guests and thanked all of the presenters for participating in today's meeting. Chairman Hinton called the roll and determined that a quorum was present.
Minutes from the January 12, 2017 Meeting	Mr. Hobbs moved for approval of the January 12, 2017 minutes as presented. Motion seconded by Mr. Cole. All voted in favor and the minutes were approved.

Provider Presentations:	
Prodigi Tim Worting	Mr. Worting is the Owner and Vice President of Digital Connections. They have been providing voice and data since 1986. They have a fiber project called Prodigi in Preston County. There is currently a backlog of people waiting to be hooked up. Their challenge is the last mile fiber. They were required to build seven miles of middle mile on their own and only went by one person. It is hard to go into rural areas and it takes a long time to hook up customers. The average drop is 500 feet. They are currently trying to find funding. They are working with Senators on a broadband bill. The bill would give tax credits to incent companies to go into the rural areas. The bill also includes a loan program through the WV EDA. The providers would go to a bank and seek a loan that would be backed by the EDA. This would cost nothing to the state. This would help the banks give loans with no collateral. They are currently trying to determine what the definition of "underserved areas" should be. The EDA just backs the loans and does not subsidize them. The payback is 15 years. Broadband Day at the Legislature is February 28th. The EDA currently has a program where they can back 85%. The EDA is then backed by the Federal Government. The interest on the loan is determined by the bank. It was suggested that the EDA should subsidize so they could control the interest rate. The proposed bill does not have a subsidy and they are keeping it at no cost to the state. The proposed pay back is at A provider needs 15 customers per mile to get a return on their investment. The cost is $2,000 per household. The network cost is $25,000- $30,000 per mile. It takes about five years before the providers make money. The "make ready" cost is the issue with getting service. That is when you are attaching to existing poles. You must follow the guidelines. The other providers don't want to move their lines to make room for the fiber so you must set your own poles and it is very expensive. You must keep your overhead down so you can't afford to hire a lot of employees to set poles.
Cambium Networks Alan DesJardins	Mr. DesJardins gave a history of the company. He advised that "Cambium" means growth. They have six million radios in 6 continents with 2,000 field representatives. They provide a full range of certifications and training for their installers and have 24/7 customer service around the world. Mr. DesJardins gave a line of site analysis and access. The mission is to connect the unconnected. They touch everything and sale through a multitude of providers. Link Planner is a tool they make that allows for high level planning to make a network. They have a WiFi portfolio for the house that only needs one power plug to manage the entire network. Point to multipoint portfolio frequency reuse can give you twice as much as spectrum. Point to multipoint portfolio covers 500 gigabits bands and can do 400 megabits a second. They have lower price products that are affordable. 450 integrated antenna array works in three modes. Mr.

	DesJardins identified all the applications they provide. They have a long array of point to point products. With broadband they thrive when the homes are far apart. They are more capable to provide service and have world class wireless networks. There was a lengthy discussion on leaf penetration. Mr. DesJardins advised that you can go to cambiannetworks.com and see the products and services they offer.
Shentel Terry Smarr, Chris Kyle	Mr. Kyle gave a brief overview of the company. Shentel provides an integrated portfolio that services rural communities in WV and VA. Their mission is for rural communities to gain service. They are different than the larger providers. They have a 150-year history that started by a group of farmers who started a company so they could get service to their farms. They provide maps, build networks, provide customer service and invest in communities. They have 269 employees in WV and VA. Shentel has the resources to make the investments. They were the first telecom provider in WV to have 100 gigabit. Forbes ranked them one of the 100 most trustworthy companies three different years. E-rate Leadership is an important federal program. The program goes into schools and provides for private/public partnerships to get service to schools and communities. Shentel has made a significant investment in WV. They have 1,945 fiber route miles and 5,109 total miles. In McDowell County they spent over $9 million and got fiber to 11,000 people and to the McDowell County schools. They bought Colane Cable and spent $9.6 million to upgrade 11,000 homes in Logan, Mingo, and Boone counties. They have 100 megs to the homes and all the businesses have broadband. They also bought Rapid Cable and Jet Broadband as they were in the area. They decided to work to get service in the areas they had the companies. The take rate in McDowell County is 25% internet penetration. They do line expansions all the time when they get calls for service. They talk to surrounding homes to see who would take the service to make sure it is worth their investment. You must train and educate people who have never had connectivity or a device so that they will want it. Shentel also bought NTelos and are going to rebrand to Sprint. Sprint has never worked in WV and so now they will be able to give WV options. Several maps were displayed that shows where their networks and fiber are located as well as where they plan to put towers. Redundancy and capacity is important. They have significant network issues but less with redundancy. You need more than one of everything. Shentel revealed their spending and advised they are the leading provider of telecommunication with voice, video, data, wireless and wired line. Using anchor institutions is the key to getting broadband to rural areas. Discussion on a project in Bristol TN that had a huge loss and is currently trying to be sold. The entire project was a “train wreck”.

	Unless you have 20 to 30 homes per mile it becomes a challenge. There are a lot of older, shorter, poles that need replaced. Poles are expensive so they get into conflicts with the power companies because they haven't upgraded the poles like they should. The state should talk to the providers so they communicate on towers, poles, etc. The broadband Council needs to get the providers together and decide who will build where.
GigaBeam Networks Michael Clemons	Mr. Clemons gave a history of the company. They got started in 1997. They are a WISP (Wireless Internet Service Provider). They deal with fixed antenna wireless and their focus is no the rural areas. Their service is 10-50 megs and they are getting ready for LTE wireless. The pricing starts at $39.00, which will get you 10 megs, and goes up to $79.00. They are adding VoiP and TV this year. 80% of their customers are residents and 20% is businesses. They cover Monroe and Mercer counties in WV. They plan to expand this year but first want to fill the gaps in their coverage. They plan to expand to Greenbrier, Summers and Raleigh counties. They work through private/public partnerships to build networks. They displayed a map of the Gigabeam Network. Getting fiber to WV is more difficult than in VA due to the terrain. They use different manufacturers for customer connectivity but mostly use Cambium Network. The impediments to networks is finding good places for towers, zoning issues, if the go to another provider's tower it is expensive, spectrum difficult to keep up speeds, and most parts of the state has no backbone. The towers they build are 20' wide and 150' tall. It is more cost effective to build their own towers. Fixed wireless is fast, secure and most affordable. All the wireless is encrypted and can't be decoded.
Armstrong Shawn Beqaj	Mr. Beqaj gave a history of the company. There were started in 1946 in PA. They serve five states including WV. They are the tenth largest in the country. They are a diverse company and versified as they also do home security systems, etc. They expand their fiber constantly and rebuild their networks. They expand their capacity every eighteen months. They haven't been able to connect the home security to broadband like they thought they would. They need to have ten homes per mile in order to go into an area. With less than that you must come up with options. They started A-CAM and are obligated to build the footprint to 35/3 mbps with the State Broadband Fund. They are compiling date on unserved areas close to the existing footprint. Good mapping drives good policy. The Federal opportunities include CAF II, RUS Grants, E-rate build support and NTIA. There are rumors that the federal government will have $30 billion in a broadband program. If it is like the stimulus program it will contain too many requirements. Mr. Beqaj displayed a map of their networks and footprints. They have systems in Hamlin, Harrisville and South Point. The impediments are pole attachment issues and permitting.

MicroLogic Michael Sherrell, Emil Butcher	Mr. Butcher have a history of the company. They are a full service communications company that does cabling, network design, security systems, etc. They are a WISP member. They do not use WiFi services. 98% of their network is Cambium's gear. They are a last mile network. A map of their current coverage was displayed. They have 43 transmitters in 7 counties. They do resident, community, industrial, governmental, medical and utility. They have custom built equipment for themselves. They have a research and development lab in Buckhannon where they try to come up with solutions. They have 100 to 120 foot standing towers that are the core to their network. A typical tower covers 200 to 300 homes. People will not purchase property where there is no broadband service. Developers come to them all the time and want to partner with them to get service and sell property for housing developments. Their flagship service is $36.95 but they have higher tiers and lower tiers. When they build they try to keep their costs as low as possible so they can give affordable service. They are constantly expanding and upgrading. They set service as 50/50. Customers want 25 up and 25 down.
New Era Brandband Services David Hannum	Mr. Hannum gave a brief history of their company. They are a small company in Meigs County OH. They are trying to expand to Jackson and Mason County WV. They have 31 towers in one county. New Era has line of site gear but it is a challenge due to the hills and trees. Before you start you need to find out where the backhaul bandwidth comes from. They have two fiber connections. One cost them $10,000 and the other cost $60,000. The FCC limits signal power. They operate at 900MHz. Their 31 towers range in height from 64'AGL to 265'AGL. Only two out of every seven requests they can actually serve because they can't get line of site. One customer actually cut down forty trees to get service. The costs are high for towers and equipment. A 195' tower costs $75,000 and a 65' tower costs $10,000. Another problem is the FCC controls the airways. They should remove restrictions on TV White Space. The restrictions are that the towers can only be 100' in height and also only so high above the terrain. Bad terrain makes the WV White Space no as valuable. They should also allow WISP's to share in the CAF Funds.
Amherst Photonics Brent Ware	Mr. Ware gave a lengthy history of the company. They partner with Amherst Photonics. They manufacturer and install fiber cable. They were founded in Sweden. They are making their first inroads to the US where they hold 10% of the market share. In comparison, they hold 90% in Scandinavia, 96% in New Zealand, 60% in South East Asia, and 45% in Europe. They work with the top ten cable providers. They discussed the ease of installation of their products. One their products highlighted was a tool for cable delivery and installation call Robbonett. The actual tool was passed around to the attendees.

Alpha Technologies, Inc Charlie Dennie	Mr. Dennie gave a brief history of the company. The purchased the former Union Carbide datacenter where they provide cloud services for businesses in the greater Charleston area. The built a ring around both So. Charleston and Charleston. They use a technique called micro trench to bury their cable. This includes an 18' deep and 2" wide trench where the cable is then laid. They secured the right of way from WV DOT by offering them free use of two strands of fiber. Similar deals were made with So. Charleston and Charleston.
HughesNet Christi Watkins	This is a satellite company that showcased satellite technology. They discussed the advantages and shortcomings. HughesNet requested that we did not take notes during their presentation.
Green Bank Observatory Mike Holstine	Mr. Holstine is the General Manager of the Green Bank Observatory. His presentation was focused on the silent zone in WV. The only one remaining in the US. WV was the first state to include silent zone legislation in the country and it actually predated the federal legislation by several years. The zone protects both the observatory and a NSA facility nearby, from electromagnetic interference. No radio, TV or cell servicer over the airwaves is allowed in the area. On interesting point was made regarding the use of pine trees around the facility. Thanks to their high water content and their shape, they tend to absorb electromagnetic waves.
Next Meeting Date and Proposed Agenda	March 9, 2017
Public Comments	There were no public comments but the public was allowed to ask questions during the presentations.
Adjournment	Meeting was adjourned.