

Broadband Implementation Committee
October 21, 2020 Regular Meeting 2:00 pm

At a regular meeting of the Broadband Implementation Committee held on Wednesday, October 21, 2020, at 2:00 pm in the Main Meeting Room, Berryville Clarke County Government Center, 101 Chalmers Court, 2nd Floor, Berryville, Virginia.

Members Present: Bev McKay, Dr. William Houck, Doug Lawrence

Members Absent: Buster Dunning, Doug Kruhm

Staff Present: Chris Boies, Felicia Hart, Brandon Stidham, Brianna Taylor

Others Present: Shentel Representatives, Bryan Byrd and Dan Meenan (via phone)

1. Call to Order

At 2:03 pm, Chair Lawrence called the meeting to order.

2. Approval of Minutes

Dr. William Houck, seconded by Bev McKay, moved to approve the August 19, 2020, minutes as presented. The motion carried by the following vote:

Buster Dunning	-	Absent
William Houck	-	Aye
Doug Kruhm	-	Absent
Doug Lawrence	-	Aye
Beverly McKay	-	Aye

Chair Lawrence stated that at 2:30 pm, Shentel representatives would be calling in with an update.

3. Update from the State on the CARES Act funds

Chris Boies highlights:

- Governor announced last week that there was additional CARES Act funding of \$30 million available for broadband. The issue is that the projects have to be completed by December 25, 2020.
- County Administration immediately sent out an email to all carriers to see if any local providers had a project that could be completed in that timeframe.

- All Points broadband expressed that they may have a potential project but we have not heard back from them.
- AER will meet with us next week to discuss possible options for Clarke County.
- Currently only two (2) vendors have interest, if they submit a plan, County Administration will immediately send the application to see if we can get the CARES Act funding.
- Projects have to be done by December 25, 2020.
- For the two (2) interested in discussion, no specifics on the projects or cost are known at this time.

Bev McKay asked if FOX wireless is on the provider's contact list; Chris Boies confirmed that he would make sure they are on the list.

Chair Lawrence stated that an All Points representative expressed an interest in coming to a future meeting to discuss options and the work that is being done with NOVEC.

Chair Lawrence stated that All Points has many employees so they may be able to get a project done prior to the December 25, 2020, deadline. Chris Boies added that the representative did not seem concerned with the quick deadline.

4. Rappahannock Electric Cooperative Update

Chair Lawrence highlights:

- Rappahannock Electric Cooperative is participating in an FCC auction but they are still in the quiet phase so no news at this time.
- Today there was a Board meeting, and they voted on how they wanted to handle the auction.
- Their Chairman of the Board is very excited about broadband and stated that they are interested in getting fiber to the homes.
- An important date for the auction is November 29, 2020, but there will be a lot of back and forth - hope that the Shentel representatives will be able to explain how the auction works.
- With new personnel at Rappahannock Electric Cooperative, looks like they are more interested in the fiber to the home and looking at the different opportunities.
- Bev McKay expressed that he feels like the past tower search was a waste of time and effort. Chair Lawrence stated that Shentel would be able to use their band-spectrum along with the towers to better the service in the trouble areas.

5. Shentel Update

Chair Lawrence read the following article:

Shentel Wins Big for Rural Communities at CBRS Mid-Band Spectrum Auction

Posted 1 October 2020 12:00 AM by Shentel

EDINBURG, VA (October 1, 2020) – Shenandoah Telecommunications Company (Shentel) (NASDAQ: SHEN), a leading provider of telecommunications and broadband services in Virginia, West Virginia, Pennsylvania, Maryland, Kentucky and Ohio, today announced the Company won a total of 262 Priority Access Licenses (PALs) in 74 counties at the FCC's CBRS mid-band spectrum auction.

Shentel's strategy for the auction was informed by the Company's mission which is to enrich the lives of its customers by bringing the highest quality telecommunications services found anywhere else in the country to the rural areas and smaller communities which it serves. Shentel made an investment of over \$16 million and won an average of 3.54 out of 7 of the PALs in 74 counties across Virginia, West Virginia, Maryland and Pennsylvania.

"We are very proud to win 262 licenses in the CBRS auction," said Dave Heimbach, EVP & COO of Shentel. "Broadband access has become increasingly critical amidst the COVID-19 pandemic, and Shentel specializes in providing advanced telecommunications services to rural and underserved markets where the lack of broadband is particularly acute. This investment in mid-band spectrum, which is particularly well-suited to fixed wireless broadband deployments in rural areas, will ensure we are able to continue bringing critical broadband access to the communities we serve."

In addition to the CBRS spectrum acquisition, Shentel is also launching a new high-speed Internet service this month using fixed wireless broadband technology on 2.5GHz mid-band spectrum in portions of Virginia, West Virginia and Ohio. "Beam Internet" by Shentel was created to reach homes beyond the edge of its fiber to the home and cable broadband networks. Beam will leverage a 5G-ready fixed wireless network that will also take advantage of the newly acquired CBRS mid-band spectrum. The new service will enable rural homeowners to connect to the Beam wireless network via a small outdoor modem mounted on or near the roof of their homes. There will initially be three speed offerings available:

- 25Mbps Download/3Mbps Upload
- 50Mbps Download/5Mbps Upload
- 100Mbps Download/10Mbps Upload

Prices will start at \$60 per month for high-speed Internet with available home phone service including unlimited long distance for an additional \$20 per month. The service will include an outdoor mounted receiver and up to 2 in-home Wi-Fi extenders.

For more information about Shentel, please visit www.shentel.com or call 1-800-SHENTEL (1-800-743-6835). To learn more about Beam Internet by Shentel, please visit www.iwantbeam.com.

About Shenandoah Telecommunications

Shenandoah Telecommunications Company (Shentel) provides a broad range of diversified communications services through its high speed, state-of-the-art wireless, cable and fiber optic networks to customers in the Mid-Atlantic United States. The Company's services include: wireless voice and data; broadband internet, video, and digital voice; fiber optic Ethernet, wavelength and leasing; telephone voice and digital subscriber line; and tower colocation leasing. Shentel is the exclusive personal communications service ("PCS") Affiliate of Sprint in a multi-state area covering large portions of central and western Virginia, south-central Pennsylvania, West Virginia, and portions of Maryland, Kentucky, and Ohio. For more information, please visit www.shentel.com.

Chair Lawrence stated that Shentel is the parent company of GLO Fiber. Chris Boies expressed that GLO Fiber is not badly priced. Chair Lawrence wondered what the cost would be to run the fiber to the homes adding that he thought \$3,500 per resident was the maximum they could do.

Chris Boies stated that Shentel has been very proactive in Shenandoah County, and it may be because their headquarters are there.

Shentel representatives Bryan Byrd and Dan Meenan called into the meeting.

Dan Meenan highlights include:

- Shentel is the local telephone company in Edinburg for the past 115 plus years.
- Spent the last 15 years building out a mobility network for Sprint.
- Sprint became T-Mobile, which inherited a contract with Sprint and decided to exercise the option to purchase Shentel's mobility wireless network; that process is ongoing, not completed at this time.
- Shentel recently launched a new fixed wireless service, meaning an antenna on the home and broadband is being provided similar to DSL, cable modem, fiber to the home; except the last mile is provided via licensed wireless frequencies.
- Shentel purchased a 2.5GHz broadband spectrum around a year ago and recently acquired an additional CBRS spectrum at 3.5GHz.
- At this time no plans have been announced for the new spectrum - we believe it is ideally suited to also support fixed wireless.
- Shentel's fixed wireless business model is to not compete with the incumbent cable company or the incumbent to the home company. Shentel's goal is to bring advanced telecommunications to people who are underserved in rural America.
- With the 2.5GHz pursuing to attach antennas to large cell phone towers, broadcasting that out, and then to send direct mail pieces to customers who are likely underserved.

- Hope to provide 25 to 50 megabit speeds per second broadband depending on how well the home is sighted to the cell tower.

Bev McKay asked how dependent is the line-of-sight. Dan Meenan stated that the line-of-sight does not need to be perfect from the home to the cell site; it is based on the 3Gppdlte standard and has outstanding radio access equipment that leverages the latest technologies. Adding that it can overcome a little tree blockage, it will not go through a forest but it does have more tolerance than the older microwave waves. Expressed that physical terrain is hard to overcome, trees are more tolerant of overcoming, but the difference for Shentel is that we have an exclusively licensed spectrum, so we are not reusing the licensed spectrum. Adding that the frequency that Shentel has is generally much lower than others use, and the lower the spectrum, the more robust and tolerant it is for things like trees.

Bev McKay asked when it would be in Clarke County. Dan Meenan expressed that this is a tough question, explained that the good news with Clarke County is that it is local and Shentel not only bought the CBRS spectrum for Clarke County but Shentel bought the most amount of spectrum that could be purchased. Bought as much as possible with the FCC guidelines. Some jurisdictions Shentel could not buy any or only buy a smaller amount but with Clarke County Shentel was able to buy as much as was available. Suspect that there is a sizable amount of potentially underserved customers.

Brandon Stidham stated that generally speaking the wired broadband is going to be in the incorporated towns, and recently received data from the schools from a broadband needs survey, and it is pretty much extensive. Adding that some people have been able to get some individual success with WISPs and have some isolated areas where Comcast has hooked up some neighborhoods off the primary highway, but throughout the entire County the most problematic and challenging areas are along the mountain and down towards the river where it is too low to get a signal.

Dan Meenan stated that Shentel has many more jurisdictions than we have time, focus, and money to build right away. With just launching the service in two counties know that it takes a lot of time just to get there. He then asked what existing towers are in Clarke County, suggested that we get that data to them so they can see what they have to work with since in the business model there is not enough money to build new towers.

Bev McKay stated that Clarke already has a list of all of the towers throughout the County. Brandon Stidham further explained that a full broadband study was completed four years ago that contains the inventory of all of the current towers and locations are plotted for preferred new tower locations. Adding that, that information can be sent over for Shentel to review.

Dan Meenan explained that fixed wireless is a way to make the last miles more cost-effective, but with the many priorities right now due to the pandemic if Clarke can look internal at the Zoning Ordinances that relate to new wireless towers it will be beneficial because with the new business finding out that taller towers are not always better, but it may make more sense to build smaller towers. If the zoning ordinance is written to allow more openness with the towers than it is easier - because all of the zoning steps can take years.

Brandon Stidham stated that the Zoning Ordinance was recently changed to allow for structures up to 100 feet free-standing or up to 80 feet if it is attached. Primarily intended to be a small footprint structure to go at the residential end-users home site but could also be used as a repeater or mesher within a neighborhood or nearby properties. The structure that the ordinance covers are similar to what AM radios use, so not the big cell tower size structures. Clarke has had a few WISPs that came in and built structures in the County with the hope that more people will sign up and pop up off of that tower.

Bryan Byrd expressed that a limiting factor is the treeline. The tower needs to be able to get a pole that pokes out up above the treeline. There is another project that Shentel was looking at with the fixed wireless and the treeline was what shut it down because a right-of-way could not be cleared to get towers above the treeline. If it is feasible to do, then it will be more of a priority project. Depending on treeline, a tall telephone pole that is between 50 and 100 feet may be suitable depending on the specific treeline, so it is not a large footprint structure.

Dan Meenan explained that anything 80 to 100 feet above the tree canopy is the most suitable, adding that it is not a telephone pole, but it looks similar to one because it is a steel monopole with antennas generally flush mounted to it. Shentel prefers the steel monopole as opposed to the wood for transportation because a monopole can be broken-down and assembled on site.

Chair Lawrence asked and Dan Meenan confirmed that POPS is the population count.

Chair Lawrence asked with the 13¢/MHz per population is what Shentel paid for the bandwidth. Dan Meenan explained that Shentel paid \$16 million, the price per MHz per POP is the overall price divided by the amount of MHz that were available and purchased and then divided by the total population. All based on how much spectrum and the population. It was a sizable investment for a company of Shentel's size but the most important thing is that Shentel bought as much spectrum in Clarke County that was allowed to be purchased.

Chair Lawrence questions if Shentel has been in contact with Rappahannock Electric Cooperative to have potential projects in the future. Dan Meenan explained that on the wireless side, we do not speak with Rappahannock a lot but am sure that the

wireline side does have meetings to discuss potential projects. Bryan Byrd expressed that Shentel is looking more into a potential partnership with electric cooperatives and internet providers. There are definitely discussions, but no projects are set at this time, but conversations are happening.

Dr. William Houck stated that all understand that there are many unknowns and variables with potential of coming into Clarke County but what is an optimistic timeframe. Dan Meenan noted that he would love to have a definite answer but since Shentel has bought the CBRS spectrum there have been ten engineers working hard to do analysis on all of the Counties. Until that analysis is done and all of the pros and cons of the jurisdictions are examined there is no known timeframe. Adding that he thinks Clarke is in a great position because it is local, sounds like you have an open for business zoning policy, have a desire, and we purchased the maximum amount of spectrum.

Dan Meenan explained that with as many underserved residents as Clarke seems to have, there is a pending FCC auction that is currently in a quiet phase but in Clarke County there seems to be no RDOF locations. Bryan Byrd explained that Rural Digital Opportunities Fund, RDOF location is based on the 477 data, given that there is a patchwork of different providers in Clarke County, his guess is that a majority of areas were claimed as served but they really are not served and that is why they are not showing up as RDOF eligible areas. Further explained that 477 is what FCC reports as internet service providers provided service area by census block, when a portion of the census block is served than the whole block is reported as served, so just because a handful of homes have service it will be reported that the entire area is served. FCC made the decision when RDOF Rural Digital Opportunities Fund, with the auction they decided to push forward with the reports they had and did not have time to go back and correct the data before so they went ahead with the auction. Adding that many areas that actually are not served are not captured in this auction. The upside for Virginia is that there is an increasing amount of money available through the Virginia Telecommunications Initiative (VATI). With that grant process Shentel has had success with the provider to go in and demonstrate that the entire area is not provided service - adding that Shentel could continue to discuss with Clarke County to plan for the future.

Chris Boies expressed that Clarke County has reached out to Shentel for the VATI grant and also with the CARES Act funding to be used between now and the end of the year and the response is that Shentel wants to move into Clarke County but are not ready to move on any projects yet. Knowing that you acquired this spectrum, is there any possibility of getting any projects done with the CARES Act funding by the end of the year, added that Clarke County has locations of tower sites and have a fairly user-friendly ordinance, some of that infrastructure cost could be taken care of by some of the federal funds. Is there a possibility Shentel could move on something quickly by the end of the year. Bryan Byrd stated that on the wireline side coming to the end of the year, Shentel is already overbudget and COVID-19 has thrown in some

significant material shortages so it is hard to finish a project. In terms of the CARES Act funding have been hoping that the decision makers would recognize that an end of year deadline is absolutely insane and there is no way to start a new project and get it completed in that short amount of time. The deadline is less than ideal because there is much work to be done but it does not give enough time to finish anything.

Chris Boies stated that Shentel and Clarke County should start working on the VATI application now to get ahead for next year and work together on that. Dan Meenan stated that with the CBRS spectrum there should definitely be an opportunity with VATI.

6. Clarke County Broadband Accomplishments through October 2020

- December 2016 -- Board of Supervisors accepted the “Telecommunications Infrastructure and Broadband Study 2020” prepared by the Atlantic Group to be used as a guidance document to improve broadband and telecommunications coverage for residents and businesses.
- February 2017 – The Board of Supervisors formed the Broadband Implementation Committee consisting of two Board members and two Planning Commissioners. The purpose of the committee is to develop projects and recommendations to help expand broadband internet availability. The committee began meeting in May 2017.
- June 2017 -- Zoning regulations for communication towers (“wireless communication facilities”) were updated and modernized to help encourage expansion of telecommunications infrastructure.
- June 2017 – The County issued a Request for Information (RFI) to telecommunications providers and infrastructure developers to gauge the industry’s level of interest in expanding broadband and telecommunications as well as ways that the county can assist with this effort.
- September 2017 – The County launched www.clarkeconnect.org – a website dedicated to provide information on broadband initiatives and provider options.
- June 2018 – The Broadband Implementation Committee convened a roundtable meeting with broadband industry representatives to explore ways that the County could assist the private sector to expand broadband availability and potentially remove regulatory barriers.
- February 2019 – New zoning regulations were adopted to allow antenna support structures up to 100-feet tall to facilitate residents’ access to wireless broadband services.
- March 2019 – The County, in partnership with Comcast, was awarded a Virginia Telecommunication Initiative (VATI) grant to extend wired broadband internet to the village of White Post.
- May 2019 – The Broadband Implementation Committee met with representatives from Rappahannock Electric Cooperative (REC) to discuss their future plans to

provide broadband internet service in Clarke as the Central Virginia Electric Cooperative (CVEC) is doing in central Virginia through their spinoff company, Firefly Broadband.

- July 2020 – The Board of Supervisors added a citizen member to the Broadband Implementation Committee.
- August 2020 – County Staff developed a map using survey data from Clarke County Public Schools to identify areas of the County that lack broadband access.

Bev McKay expressed that he would like to get this out to the public.

Chair Lawrence stated that it would be included in the Legislative Priorities List, adding that he hopes to add to this list in the near future.

7. New Business

Chair Lawrence asked Dr. William Houck to research if the new electronics and 5G would impact health. Dr. William Houck stated that he would research and bring his findings back to the committee.

Brandon Stidham stated that the health risks of electromagnetic waves cannot be considered when evaluating a communications tower. Further on a federal level, no radio waves can be considered when assessing a communications tower.

8. Next Meeting staff recommends: January 13, 2021, 2 pm, Main Meeting room

By consensus, the committee set the next meeting for Wednesday, January 13, 2021, 2:00 pm, in the Main Meeting room.

9. Adjournment

Bev McKay, seconded by Dr. William Houck, moved to adjourn the meeting. The motion carried by the following vote:

Buster Dunning	-	Absent
William Houck	-	Aye
Doug Kruhm	-	Absent
Doug Lawrence	-	Aye
Beverly McKay	-	Aye

At 3:03 pm, Chair Lawrence adjourned the meeting.

Minutes Recorded and Transcribed by Brianna R. Taylor