Mecklenburg County

Mecklenburg Co./EMPOWER VATI application

Application ID:	64508012019082400
Application Status:	Pending
Program Name:	Virginia Telecommunications Initiative 2020
Organization Name:	Mecklenburg County
Organization Address:	350 Washington Street Boydton, VA 23917-0307
Profile Manager Name:	Nancy Rowe
Profile Manager Phone:	(434) 738-6191
Profile Manager Email:	nancy.rowe@mecklenburgva.com
Project Name:	Mecklenburg Co./EMPOWER VATI application
Project Contact Name:	Wayne Carter
Project Contact Phone:	(434) 738-6191
Project Contact Email:	wayne.carter@mecklenburgva.com
Project Location:	
	350 Washington Street Boydton, VA, VA 23917-0301

Total Requested Amount: \$56,200.00 Required Annual Audit Status: Accepted

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Budget Information: Cost/Activity Category Other Funding DHCD Request \$172,261.00 **Telecommunications** \$56,200.00 \$116,061.00 \$172,261.00 Construction \$56,200.00 \$116,061.00 Other: Network Equipment \$0.00 \$0.00 Total: \$56,200.00 \$116,061.00 \$172,261.00

Budget Narrative:

The proposed budget is based on the verified capital needs required for the passing of 49 residences and businesses in Mecklenburg County. The proposed budget was created by examining the cost to build out a fiber broadband system in these selected project areas. Once the project cost was established, the project team worked collaboratively with Mecklenburg County officials to acquire the other sources of funding. The other sources of funding include an in-kind service contribution of \$116,061 from Mecklenburg Electric Cooperative and EMPOWER Broadband, Inc. The cost for the State for DHCD VATI grant funds are \$1,146.94 per passing.

Questions and Responses:

1. Project Area

Explain why and how the project area(s) was selected. Describe the proposed geographic area including specific boundaries of the project area (e.g. street names, local and regional boundaries, etc.). Attach a copy of the map of your project area(s). Label map: Attachment 1 – Project Area Map.

Answer:

This proposed project area is located in the southeastern portion of Mecklenburg County; Mecklenburg is in the heart of Southside Virginia along the border of North Carolina. Fiber deployment will utilize foundational backbone infrastructure and VATI funds will serve to expand off the already funded backbone to decrease the number of individuals that currently do not have access to broadband internet. The fiber will be built along the 3phase Mecklenburg Electric Cooperative (MEC) electric infrastructure that runs along the following roads: Beechwood Rd. Anna Lane, Hicks Drive, and Wayne Court. This project proposes the deployment of 2.14 miles of Distribution and Access class fiber by MEC, with EMPOWER Broadband extending fiber-to-the-premises for those within the project boundaries.

This area was selected to maximize the advantage of being adjacent to MEC's Substation Fiber Backbone that has been constructed with matching funds through a 2018 TRRC Grant and is part of a larger nine (9) county jointproject to provide fiber-to-the-premises. Additionally, this route passes many rural residents and will provide broadband opportunities to 49 homes in Mecklenburg County. Most important to this grant, this area is unserved and is not part of any other existing or proposed high-speed system build-out. Relatively low-speed mobile and high-latency satellite are currently available in this area; there is a small portion of this project area that has DSL, but it does not meet the required 10/1 Mbps threshold, as verified by the current service provider, Buggs Island

Total

\$0.00

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Telephone Cooperative, that DHCD requires for an area to be qualified as served.

2.

Describe your outreach efforts to identify existing providers in the selected project area. Provide a detailed explanation of how this information was compiled and the source(s). Provide a map and list of all existing providers (fixed and wireless) and speeds offered within the project area. Label Map: Attachment 2 – Existing Provider Map; label documentation: Attachment 3 – Documentation on CAF Funding Area.

Answer:

Mecklenburg County and its residents were substantially engaged in the Center for Innovative Technology (CIT) broadband survey; the results are documented in the Virginia Broadband Availability Map. The CIT broadband map also provided the current existing providers for each census block in Mecklenburg County. Data was also collected from the Federal Communications Commission's (FCC) "Fixed Broadband Deployment" as an additional source to determine the current providers in the project areas. From that information, efforts were made by reaching out to those providers listed, Comcast and Buggs Island Telephone Cooperative, by means of a phone call, website chat and through the address entry field on their websites. By using these resources, as well as, by speaking directly to MEC members living in the proposed project area, we discovered that the current providers listed in that area either did not provide any services in an area, or the currently provided service is well below the 10/1 Mbps requirement and, by DHCD and VATI definitions, is determined to be an unserved area. The included coverage map documents the need in this area and the reinforces statements form members within the county overall. This project will address teacher findings within a local school that indicates less than 50 percent of students have broadband at home, which is a significant encumbrance to education in today's technology-driven society.

3. Project Need/Description

To be eligible for VATI, applicants must demonstrate that the proposed project area(s) is unserved. An unserved area is defined as an area with speeds of 10 Mbps / 1 Mbps or less and with less than 10 percent service overlap within the project area. Describe any anticipated service overlap with current providers within the project area. Provide specific information as to how you determined the percentage overlap. Label Attachment: Attachment 4 – Documentation Unserved Area VATI Criteria.

Answer:

Data was gathered from the CIT's Integrated Broadband Availability Map and Integrated Broadband Planning and Analysis Toolbox. The most recent FCC 477 data and the FCC Broadband Map. As of the time of the application submittal, there are only two providers, other than satellite, that have reported coverage within the proposed project areas. Upon further investigation by utilizing the company's address availability form on their website and by reaching out to those providers, it was discovered that the areas that were listed as having cable (Anna Lane and Beechwood Rd.) were unable to provide those services to residents in those areas due to these areas being outside of the listed provider's footprint. When staff members for the Center for Innovative Technologies (CIT) were contacted, EMPOWER Broadband staff was informed that these areas were reported in error as having those services. This information was further verified by reaching out to MEC members who live along the proposed

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project area who reported that the service provider had informed them that services were unavailable in these areas.

According to the FCC Broadband Map and the CIT Broadband Availability Map, some areas of the proposed project did have an existing provider, Buggs Island Telephone (BIT), who was represented as having some ADSL services overlapping a small portion of the proposed project area. By reaching out to the provider and speaking with members along the proposed route, it was discovered that overlap in a small portion of the proposed project area that had been reported as having ADSL service did not have access to the minimum 10/1 Mbps requirement. It is also important to note that staff from BIT relayed that this area did not have equipment that could provide 10/1 Mbps service to those residents. The goal of the VATI grant is to provide broadband services to residents of Virginia; and even though there is ADSL service available in a limited portion of the proposed project area, it does not meet the minimum requirement by the listed provider's own admission. Subsequently, the area must be regarded as unserved.

4. Provide the number of residential serviceable units in the project area(s). Describe the eligible premises that will be served by the proposed project and the basis for these projections.

Answer:

According to maps from internal GIS systems, the area proposed has 49 MEC accounts located within 1,000 feet of the proposed fiber line, six of those being at home businesses. Converting this to the actual population using an estimated 2.5 consumers per household, this grant area encompasses an estimated population of 123 rural residents. Other than the overlapping DSL mentioned above, which is within the limit set for by VATI guidelines, all of these residences lack access to the minimum 10/1 Mbps speed. An estimated 45% take rate within the first year is expected based on household income, level of education and the age of those along the proposed routes based off of research data adopted by the Pew Research Institute and the feasibility study conducted by Pulse Broadband for the entire MEC service territory. This would mean that within the first year of project completion, a minimum of 22 locations are expected to have broadband services provided. This 45% take rate is perceived to be conservative and easily obtainable due to the current lack of service and after conversations that were held with members living in this area. It is also important to note that this particular project is just one of three application submissions that cover multiple jurisdictions and will expand off of a 135-mile fiber backbone built across six Southside Virginia counties delivering broadband access to over 2,900 locations.

5. Indicate the numbers of businesses and community anchor institutions the proposed project will pass in the project area. Also indicate the number of home-based businesses. Provide specific information.

Answer:

Along the proposed route there are six anchor institutions, with all six of those being home-based businesses. These include a construction business, real-estate office, accounting firm, a wine distributor, medical transport facility, home security provider and crane and heavy machinery dealer.

6. Understanding that projected take rates are an estimate, provide the anticipated take rate for the proposed service within one year of project completion and describe the basis for the estimate. Also detail all actions (e.g. marketing activities, outreach plan) to be implemented to reach the identified potential serviceable units within the

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project area.

Answer:

The feasibility conducted by Pulse broadband for the entire MEC area, based on National statistics from cooperative areas like ours with similar service offerings in a rural setting, estimates the take rate (number of homes expected to subscribe for services) for this area to be 45 percent within one-year of project completion. This expected take rate is also based off of research conducted and adopted by the Pew Research Institute. Accordingly, from the 49 accounts passed, an estimated 22 would take service, within the first year. We believe, however, after Broadband discussions with multiple subdivisions in our service area and the interest generated by our announcement, that the 45 percent take rate is both easily obtainable and a conservative estimate.

Once field engineering for the electrical make-ready construction begins in the designated area, potential EMPOWER customers will be notified by direct mail that fiber internet services are forthcoming. Once fiber construction begins, potential customers will receive another direct mail letter, including pricing structures and a contract for early sign-up. All members who sign up prior to construction will receive free installation, a \$100 value for bundled services (internet and fiber) or half-off for internet services only. Additionally, postcard reminders will be mailed three-weeks following the second direct mailer. Once installations begin, door hangers will be placed on all doors at those accounts not already signed up for service and, where allowed, yard signs will be displayed at the properties already receiving EMPOWER services.

In addition to the above direct marketing activities, EMPOWER will set up at local community functions to educate potential customers, as well as the public, and will distribute brochures and promotional items. Social Media platforms for both EMPOWER and MEC, as well as both websites and local printed materials (newspapers and magazines), will be used to notify potential customers.

Information regarding EMPOWER, its services and construction progress is also available at each district location or by telephone.

Please see Appendix – for a summarized version of EMPOWER's Marketing Plan and marketing materials to be utilized.

7. For wireless projects only: Please explain the ownership of the proposed wireless infrastructure. Will the wireless co-applicant own or lease the radio mast, tower, or other raised structure onto which the wireless infrastructure will be installed?

Answer:

N/A. This is an application for a fiber-to-the-premises construction project.

8. Provide the proposed download and upload speeds for the project area. Detail whether that speed is based on dedicated or shared bandwidth, and detail the technology that will be used. This description can be illustrated by a map or schematic diagram, as appropriate. Describe the Internet service offerings to be provided after completion of this project and your price structure for these services. The service offerings should include all relevant tiers.

Answer:

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EMPOWER Broadband, Inc. is using the Calix implementation of Gigabit Passive Optical Network (GPON). GPON is a fiber-to-the-premises (FTTP) technology that implements point-to-multipoint architecture to serve residential and business customers and provide up to 1 Gbps service per subscriber. This technology utilizes fiber optic splitters to enable up to 64 customer locations to be served by a single optical line terminal (OLT) port. Below is an example of how the bandwidth is shared utilizing the preferred 1:32 fiber split:

Upstream (1.2 Gbps total)/(32 customers) = 37.5 Mbit/customer

Down Stream (2.4 Gbps total)/(32 customers) = 75 Mbit/customer

Residential packages offered to residents along the proposed project route would be as follows:

50 Mbps/50 Mbps - \$69.95/month (optional VOIP telephone service at \$30/month)

100 Mbps/100 Mbps - \$119.95/month (optional VOIP telephone service at \$30/month)

1 GB - \$269.95/month (optional VOIP telephone service at \$30/month)

Business packages offered to enterprises along the proposed project route would be as follows:

50 Mbps/50 Mbps - \$89.95/month (optional VOIP telephone service at \$34.95/month)

100 Mbps/100 Mbps - \$139.95/month (optional VOIP telephone service at \$34.95/month)

All business packages larger than 100Mbps/100Mbps would require a consultation for a customized quote designed to meet the business' total broadband needs.

9. Provide a description of the network system design used to deliver broadband service from the network's primary Internet point(s) of presence to end users, including the network components that already exist and the ones that would be added by the proposed project. Also describe specific advantages of using this technology. Provide a detailed explanation on how this information was compiled and source(s). For wireless projects, provide a propagation map including the proposed project. Label Map: Attachment 5 – Propagation Map Wireless Project

Answer:

Last Mile Service Delivery will use Calix customer premise equipment. The fiber drop terminates to a Network Interface Device (NID) outside the premises. From there, single-mode fiber with Angled Physical Connectors (APC) is used to connect to a Calix 844G Optical Network Terminal (ONT) and router inside the premises. The 844G Gigacenter provides wired and Wi-Fi connections inside the premise for internet service. The Gigacenter's Wi-Fi service provides both 2.4 Ghz and 5.0 Ghz bands. An optional wireless mesh device, the 804 Mesh Extender, can be used in large homes or businesses to extend the range of the wireless service. The 844G ONT/router also provides two POTS (Plain Old Telephone Service) voice jacks which can connect to an existing telephone NID via RJ-11 cable for the optional Voice over IP (VoIP) service. The ONT is powered from either a standard AC wall outlet or also can be connected to an optional Lithium-ion battery back-up unit. The last mile network uses an overall tree and branch design for the access network. Each end customer has a fiber connection in the home or business. Layer 2 switching connects the end-user back to a Calix E7-2 access device which Pages: 6 of 16

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transmits light on the fiber with a GPON small form-factor plug (SFP). E7 SFP's have a 32- way split capable of reaching 32km, which puts all accounts within range of the Beechwood substation serving the area and is also the location of the E7-2's and an edge router. Layer 2 segments are trunked to the edge router and then to one of the centralized aggregation routers. Aggregation routers are being installed in our Chase City Office and Gasburg substation. Aggregation routers are connected to a redundant Internet Data Provider using multiple 10Gb connections across a Mid-Atlantic Broadband (MBC) open-access network. The diagram below is the physical infrastructure and long-term plan, ultimately showing the location of all major network nodes, creating a highly redundant network. Each of the nine (9) larger highlighted substations contain a major network node with a locally -ringed Layer 3 router with 10Gb fiber uplinks.

It should be noted that MEC's network can support small business broadband service across the GPON network; however, such businesses can be offered higher priority and better performance through Calix's Assured Forwarding configuration.

MEC/EMPOWER's network also affords unique opportunities to large businesses requiring 1 Gbps service. The network provides high speed dedicated, unshared, connections to those with critical quality of service needs and ensures impeccable data access. This connection is not oversubscribed or split at the access level but rather uses a dedicated port.

Additionally, The MEC fiber network connects to Mid-Atlantic Broadband's middle-mile facilities to access our data provider, Pixel Factory. This connectivity maximizes existing infrastructure and facilities owned by both MBC and Pixel Factory.

10. Project Readiness

What is the current state of project development (e.g. planning, preliminary engineering, identifying easements/permits, final design, etc.)? Prepare a detailed project timeline or construction schedule which identifies specific tasks, staff, contractor(s) responsible, collection of data, etc., and estimated start and completion dates. Provide any Memorandums of Understanding (MOUs) or Memorandums of Agreement (MOAs) (drafts are allowable), letters of support, etc. The timeline should include all activities being completed within 12 months of contract execution with DHCD. Label Attachments: Attachment 6 – Timeline/Project Management Plan; Attachment 7 – Relationship between Applicant/Co-Applicant; Attachment 8 – Letters of Support;

i. If the partnership is formalized in a written agreement, provide a copy of that agreement.

ii. If the partnership has not been formalized, provide a short description of the project management role, financial commitment, or other contribution to the project for the applicant, co-applicant, and any additional partners.

iii. If applicant is not a locality(s) in which the project will occur, please provide a letter of support from that locality.

Answer:

This project is ready to enter the final design phase as planning and preliminary engineering are complete. Each segment of this project has been included in MEC's overall fiber network "tree and branch" design; this includes anticipation of substation network hardware, fiber splitting, and fiber loops. Additionally, through our knowledge of the area, each project area has been selected to maximize existing mainline pole infrastructure and minimize

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make-ready work. These areas have also been selected to reach further into additional unserved areas by creating the next fiber class for MEC's fiber expansion. The first tier or class, Backbone, is substantially underway while this application focuses more on the deployment of Distribution Class (FTTH Mid-Mile) fiber along with the required Access Class fiber (last mile) and Drops.

All fiber cable will follow the electrical system and will be installed on or adjacent to existing distribution facilities within the existing right-of-way. This allows the use of MEC's Geographic Information System for the determination of required fiber length along with classification as Distribution, Access, or Drops to facilitate the determination of fiber count for each respective use. Typically, the MEC-EMPOWER system uses 144-count fiber for Backbone, 48- and 24- count fiber for Distribution, and 12- count for routes deemed as Access.

Within 30 days of the notice of Grant award, MEC staff will complete the final fiber layout in each project area. This will include detailed GPON fiber splits, splice can location, and final material list to proceed with purchase orders. VDOT and railroad crossings have been identified and permit requests will be filed and substantially completed within this allocated time period. Residents benefiting from an awarded grant will be notified by letter of the pending deployment and the use of construction crews to complete the work.

MEC's Senior Field Engineering Technician will confirm the final design layout, checking clearances, splice can size, and splice can location to ensure future fiber deployment to other unserved homes and businesses. As a part of the confirmation process, MEC will assign contract staking engineers, with Booth & Associates LLC. Consulting Engineers, to visit each pole to confirm height and space for cable placement. Additionally, each pole will be checked to confirm selection of appropriate mounting hardware for the line angle and for review of modifications needed for cross arm or vertical pole construction.

As a result of the field review, technicians will identify all make-ready work and associated poles requiring replacement. This final layout will be assigned to Davis H. Elliot or River City Construction crews to complete all make-ready work followed by Distribution and Access Class fiber installation. Make ready and fiber installation activities are scheduled for 20 weeks.

Each 144-count fiber reel is 9,000 feet in length; such higher count fiber splicing will be performed by N&S Communications while Distribution class lower count cables will be spliced by MEC's fiber technicians. It is expected fiber splicing will require four-six weeks.

While construction crews perform make-ready work and install fiber, Booth & Associate field technicians will visit each subscriber's location to plan for the Drop installation. MEC crews will then perform the Drop installation to the home. Next Generation Electronics will install the NID (Network Interface Device) and the Router/ONT. Drop and ONT installation is set for 20 weeks as it will be completed concurrently with Distribution and Access fiber construction deployment.

Both Mecklenburg County and Mecklenburg Electric Cooperative have the common goal and responsibility of serving the citizens of Mecklenburg County. We share the objective to resolve the complication and plight of the massive digital divide between Southside Virginia and other areas of the Commonwealth. Collectively, we have heard from residents calling for resolution to this significant dilemma; our teams, including the County Administrator, the Board of Supervisors, MEC CEO, MEC's Board of Directors, and MEC staff have elected to work together to deliver a needed solution. Accordingly, MEC created EMPOWER Broadband to effect just such a change.

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As MEC-EMPOWER are jointly applying with Mecklenburg County, Mecklenburg County shall administer the grant and serve in a project oversight role to accomplish the goals and objectives of the grant.

 Matching funds: Provide a description of the matching funds the applicant and co-applicant will invest in the proposed project (VATI funding cannot exceed 80 percent of total project cost). The Funding Sources Table must be completed. Label Attachments: Attachment 9 - Documentation of Match Funding; Attachment 10 – Funding Sources Table;

i. For each element of matching funds in the description, indicate the type of match (e.g. cash, salary expense, or in-kind contribution).

ii. Identify whether the applicant or co-applicant is responsible for providing each element of the proposed matching funds.

iii. Include copies of vendor quotes or documented cost estimates supporting the proposed budget.

Answer:

The total cost of the proposed project areas is \$116,061 to provide broadband service to 49 locations. For this project, the applicant and co-applicant are requesting \$56,200 in VATI grant monies which constitutes 33% of the total project cost and breaks down to \$1,146.94 per location passed. The co-applicant, Mecklenburg Electric Cooperative and EMPOWER Broadband, is contributing \$116,061 in in-kind funds towards the project to be used for network equipment and towards construction efforts to complete the project build-out. The applicant Mecklenburg Co. is contributing in the assistance of data collection, consulting services and waiver of county permits and fees, while also aiding to secure any state permits that are needed for the construction of the project.

12. Applicant and Co-Applicant: A description of the public-private partnership involved in the project. Detail the local government assistance: Local government co-applicants should demonstrate assistance to project that will lower overall cost and further assist in the timely completion of construction, including assistance with permits, rights of way, easements, and other issues that may hinder or delay timely construction and increase cost. Provide

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detail if this project includes additional partners such as municipal providers, middle-mile providers, or investorowned utilities

Answer:

The local government applicant for the proposed project area is Mecklenburg County with Mecklenburg Electric Cooperative (MEC) and EMPOWER Broadband serving as the co-applicant. The members from the Mecklenburg County Board of Supervisors and members of MEC and EMPOWER Broadband entered into an agreement to partner and pursue DHCD VATI grant funds to provide broadband services to areas of the county that were devoid of reliable, useful broadband services. This agreement is reflected in minutes of the August 12, 2019 Mecklenburg County Board of Supervisors meeting. Mecklenburg County is providing assistance and support to the project by helping assist in obtaining all needed state and local permits, by waiving all local permit fees, providing consultation guidance and services and aiding in the collection of data.

Mecklenburg Electric Cooperative's board of directors has agreed to provide the in-kind funds in the amount of \$116,061 for the proposed project area as reflected in the attached letter in Attachment #9.

 Identify key individuals, including name and title, who will be responsible for the management of the project. Provide a concise description of their role and responsibilities for the project. Present this information in table format.

Answer:

The management team at Mecklenburg Electric Cooperative is responsible for the management of the project. This team is well-positioned and prepared to implement, manage, operate, and sustain the services proposed. Members of the team are listed in the table below.

Name	Title	Project Role	Project Responsibilities
Wayne Carter	County Administrator, Mecklenburg County	Permit coordinator	Project Oversight and serves as a liaison with Mecklenburg County
John C. Lee, Jr.	President and CEO Mecklenburg Electric Cooperative (MEC)	Project manager	Manager of Overall Project
Carol Ann Jones	Vice President of Finance and Accounting, MEC	Grant Accounting	Tracks grant expenses and prepares reports

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Sherry Harris	Administrative Assistant, EMPOWER Broadband, INC.	Administrative	Performs administrative tasks as necessary
Brian Woods	Director of Engineering, MEC	Engineering Coordinator	Coordinates engineering plans of fiber infrastructure for project
Robert Lankford	Director of Operations, MEC	Construction Coordinator	Coordinates construction of fiber infrastructure for project
B. J. Seamans	Vice President of Engineering and Operations, MEC	Engineering & Construction Manager	Oversees all engineering and construction duties for project

14. Project Budget and Cost Appropriateness

Applicants shall provide a detailed budget as to how the grant funds will be utilized, including an itemization of equipment and construction costs and a justification of proposed expenses. Expenses should substantiated by clear cost estimates. Label Attachment: Attachment 11 – Derivation of Costs; Attachment 12 - Documentation of Supporting Costs; Attachment 13 – Supporting Documentation of Cost Estimates.

Answer:

The funds requested by both the applicant and co-applicant from VATI funds will be used for the costs of both aerial (\$52,545) and underground (\$3,655) construction of the proposed fiber system for a total amount of \$56,200. MEC and EMPOWER Broadband will provide an in-kind match of \$116,061 that will be used for the remaining construction costs, as well as, the following:

Outdoor Wall Mount Labor

Outdoor Wall Mount Materials

Splicing Labor

Splicing Materials

Staking Labor

ONT (router) labor

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ONT (router) materials

These costs are listed in detail in the derivation of costs that is attached.

- 15. The cost benefit index is comprised of three factors: (i) state share for the total project cost, (ii) state cost per unit passed, and (iii) the internet speed. From these statistics, individual cost benefit scores are calculated. Finally, the three component scores are averaged together and converted to a 30-point scale to form a composite score. Please provide the following three pieces of information:
 - a. Total State funding requested / Total Project cost
 - b. Number of serviceable units
 - c. Highest residential speed available

Answer:

a) State Share for total project cost: \$56,200 / Total project cost: \$172,260

b) 49 units passed / \$56,200 = \$1,146.94 per unit passed

- c) Internet Speed: The maximum available speed is One Gigabit per second upload and download.
- 16. A brief description of applicant and co-applicant's history or experience with managing grants and constructing broadband communication facilities in the Commonwealth of Virginia and elsewhere.

Answer:

Mecklenburg Electric Cooperative and Empower Broadband Inc. are currently administering a \$2.62 Million grant for the TRRC's R&D Last-Mile Broadband Project sponsored by Mecklenburg County. Mecklenburg Electric Cooperative was also a recipient of previous TRRC grant funds in partnership with Greensville County, whereby the county was the administrator of the grant. Additionally, Mecklenburg Electric Cooperative has extensive experience in managing utility infrastructure projects similar in scope to the project proposed in this application. As a current provider of electric distribution services, MEC is required to maintain detailed records and is held accountable for proper project and data management as MEC is a borrower in good standing with USDA's RUS (Rural Utilities Services). Mecklenburg Electric Cooperative will be enforcing similar accountability and due diligence with the DHCD grant program as well.

MEC to date has constructed 50 miles of fiber backbone and delivered FTTP (fiber-to-the-premise) to 50 residences and businesses. For decades, MEC has maintained a significant communication network to maintain connectivity to three district offices and 26 electrical distribution substations across Southside Virginia. This network includes fiber optic, microwave, and cloud sections. MEC and its team collectively have vast experience in maintaining a highly sophisticated data and communications network in serving over 31,000 electric accounts across portions of nine Virginia Counties.

17. Commonwealth Priorities

Additional points will be awarded to proposed projects that reflect Commonwealth priorities. Please describe if

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the project fits into a larger locality or regional universal broadband plan.

Answer:

The proposed project area included in this application constitutes one part of a three-part submittal including three counties: Mecklenburg, Halifax and Brunswick. These project areas are also an expansion to a fiber backbone construction project consisting of 135 miles of fiber backbone serving portions of six Southside Virginia counties (Pittsylvania, Halifax, Charlotte, Mecklenburg, Brunswick and Greensville). Additionally, approving these applications compounds the \$2.99 Million awarded by the Virginia Tobacco Region Revitalization Commission.

In addition to TRRC funds, MEC has received Federal Communication Commission (FCC) Connect America Funds (CAF) in the amount of \$1.86 million to provide service to 848 residents and businesses in southern Brunswick County. Collectively, these projects represent the commitment of both MEC and EMPOWER Broadband to provide reliable high-speed broadband service to residents of Southside Virginia.

The proposed project areas, along with the current backbone project, will provide the foundation to ultimately deploy fiber-to-the-home across nine different Virginia counties that MEC serves. Since receiving clearance from the Virginia State Corporation Commission (SCC), 50 miles of backbone fiber has been constructed and residents in those areas have already begun receiving the best in high-speed fiber broadband services.

Additionally, Southside Virginia is perhaps the Commonwealth's most disadvantaged region; this project promotes both education and economic development, of which both are required to deliver desperately needed jobs. It should be further noted that in a 2014 Weldon Cooper study, Virginia's Southside Region was the only region to lose population. Regretfully, our region also demonstrated the highest levels of poverty. Subsequently, one cannot understate the value of delivering Mainline Fiber Distribution facilities into the rural areas of Southside Virginia. Accordingly, this grant request must be considered none other than one of the Commonwealth's highest priorities.

18. Additional Information

Any other equitable factor that the applicant desires to include. Applicants are limited to four additional attachments. Label Additional Attachments as:

- a. Attachment 14 Two most recent Form 477 submitted to the FCC or equivalent
- b. Attachment 15 Copy of Public Notice
- c. Attachment 16 XXXXXXX
- d. Attachment 17 XXXXXXX
- e. Attachment 18 XXXXXXX

f. Attachment 19 - XXXXXXX

Answer:

Closing Remarks

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Mecklenburg County and Mecklenburg Electric Cooperative / EMPOWER Broadband jointly submit this VATI application to deploy much needed high-speed fiber broadband to homes and business in the unserved area in and around Hicks Drive in Bracey, Virginia. Providing such services, to both its Members and communities, is a part of MEC's DNA. The Cooperative is known for providing outstanding service to Southside Virginia, in both electrical utility service and by being actively involved in the communities we serve. This reputation of excellent customer service allows MEC / EMPOWER an unparalleled recognition in expanding the delivery of rural broadband.

Mecklenburg Electric Cooperative is a member-owned electric distribution utility certificated to provide electric service to portions of nine southern Virginia counties. We currently serve over 31,000 meters across Pittsylvania, Halifax, Charlotte, Mecklenburg, Lunenburg, Brunswick, Greensville, Southampton and Sussex counties. We are one of twelve electric cooperatives in Virginia and a member of the Old Dominion Electric Cooperative, that consists of 11-member distribution cooperatives across Virginia, Maryland and Delaware.

Mecklenburg Electric Cooperative was chartered in 1938 as a part of the Rural Electrification Act to provide electric service to rural areas, by the members – for the members. After 80 years, our legacy of providing our member-owners with safe, reliable, affordable and environmentally responsible electric service continues. We operate under the jurisdiction of the Virginia State Corporation Commission (SCC) and administrated by the U.S. Department of Agriculture's (USDA) Rural Utilities Service (RUS).

Mecklenburg Electric Cooperative and Mecklenburg County's Objectives for VATI Grant Funding

With this grant, we will provide fiber based broadband service to an area that has 49 homes including six home-based businesses. The service will allow Mecklenburg Electric Cooperative / EMPOWER to offer both broadband and VoIP services. Broadband will allow the residents of this area access to previously unavailable high-speed internet that will afford multiple new opportunities including, but not limited to, educational, home based businesses, telemedicine, video streaming, gaming and overall improved communications.

Defining Mecklenburg County and Mecklenburg Electric Cooperative's Grant Need

Mecklenburg County and Mecklenburg Electric Cooperative are applying for these funds because, without VATI grant assistance, this area would fall further behind in the "digital divide" compared to areas that already have access to high speed broadband. The lack of VATI funds would also further delay the construction of an asset that has now become a requirement for everyday life in the 21st-century. Mecklenburg County is a very rural area and does not have the population density to offer a substantial payback on an investment by investor-owned internet service providers. Mecklenburg Electric Cooperative is a not for profit entity that focuses on providing service to areas that otherwise would not receive that service. In this case, the service is broadband. Mecklenburg has experience in providing service on this basis. We were formed to provide electricity to rural areas when other for- profit utilities could/would not provide it. Being owned by those that we serve, our members, require that we hold ourselves to a higher standard of service for our Members.

Why Serve this Area of Mecklenburg County?

This project area offers several key attributes for providing high speed broadband service. First, it is considered unserved by the grant guidelines and the FCC. Second, the area has accessibility to previously constructed Mecklenburg Electric Cooperative fiber backbone and would serve as an extension off existing infrastructure to be used in the most beneficial and economical fashion. Finally, the project would help establish Smart Grid communications between Mecklenburg Electric Cooperative's facilities, creating a more reliable power service to our customer/member.

Fiber Technology Offers an Unparalleled Bandwidth Platform... 10 Gig, 40 Gig, and 80 Gig

In response to the exponential growth of consumer demand for bandwidth, MEC / EMPOWER's existing electronics provider, Calix, delivers off the shelf next generation passive optical network (PON) technologies that provide 10Gbps symmetrical broadband over existing fiber cable. Additionally, Calix also produces NG-PON2 which can deliver 40 Gbps — with 80 Gbps possible in the future — all on a single fiber.

This project will make 1Gbps speed available to each home and business. By changing electronics, sizeable gains in speed are obtainable

Mecklenburg County

Mecklenburg Co./EMPOWER VATI application

for an incremental investment to accommodate the need of future families and businesses. This grant sets up the foundational investment in both fiber and the labor for its deployment.

It should be further noted that fiber technology simply rivals the highest speeds deliverable by any other technology and creates a tremendous value for both MEC / EMPOWER and VATI.

An Enduring Financial Investment for Mecklenburg County and Southside Virginia

The economic benefits of this project will continue to deliver advantages in support of broadband growth as MEC is a not for profit electric cooperative owned by its members. All margins or profits will first be utilized to expand broadband into additional unserved areas. Monetary gains will remain in the Commonwealth and County as future profits generated by EMPOWER, a wholly owned subsidiary of Mecklenburg Electric Cooperative and its members, will be utilized to reduce the cost of electricity for the cooperative member.

Summary

Considering speed, expandability, delivery from a vested locally owned and locally controlled company, at competitive pricing sets this project apart from other applications. In a related observation, a 2014 Weldon Cooper Center for Public Service Demographic Study found Southside Virginia to be the only region of eight (8) within the Commonwealth that lost overall population. Our region, our County, our Cooperative, must strive to retain our youth and our employers, and create an environment to promote every advantageous resource. Broadband is a significant factor in leveling the playing field for our rural communities.

Attachments:

Map(s) of project area, including proposed infrastructure

MecklenburgCoAttachment1ProjectMapArea823201910612.pdf

Map(s) or schematic of existing broadband providers (inventory of existing assets)

MecklenburgCoAttachment2ExistingProviderMap8202019122911.docx

Documentation that proposed project area is not designated for Connect America Funding (CAF)

MecklenburgCoAttachment3DocumentationonCAFFundingArea823201910617.pdf

Documentation that proposed project area is unserved based on VATI criteria

MecklenburgCoAttachment4DocumentationUnservedAreaVATICriteria8202019122917.docx

Project Management Plan

Attachment6TimelineProjectManagementTimelinewithDateDetailSheet18262019103915.pdf

Mecklenburg County

Mecklenburg Co./EMPOWER VATI application

Documentation of relationship between applicant and co-applicant (formal or informal) MecklenburgCoAttachment7RelationshipBetweenApplicantCoApplicant823201910627.pdf

Letters of Support

MecklenburgCoAttachment8LettersofSupport8262019104939.pdf

Documentation for in-kind contributions, including value(s) MecklenburgCoAttachment9DocumentationofMatchFunding821201945128.pdf

Funding Sources Table

MecklenburgCoAttachment 10 FundingSourcesTable 8202019122929. docx

Derivation of Cost (Project Budget)

MecklenburgCoAttachment11DerivationofCosts826201910257.xlsx

Documentation supporting project costs (i.e. vendor quotes)

MecklenburgCoAttachment12DocumentationofSupportingCosts823201910636.pdf

Supporting documentation for costs estimates

MecklenburgCoAttachment13SupportingDocumentationofCostEstimates821201945145.pdf

Two most recent Form 477 submitted to FCC

Attachment 14 VATI2020 Mecklenburg Electric Cooperative EMPOWER Broadband Form 477 and Equivalent 8262019103929. pdf the second statement of the sec

Copy of Public Notice

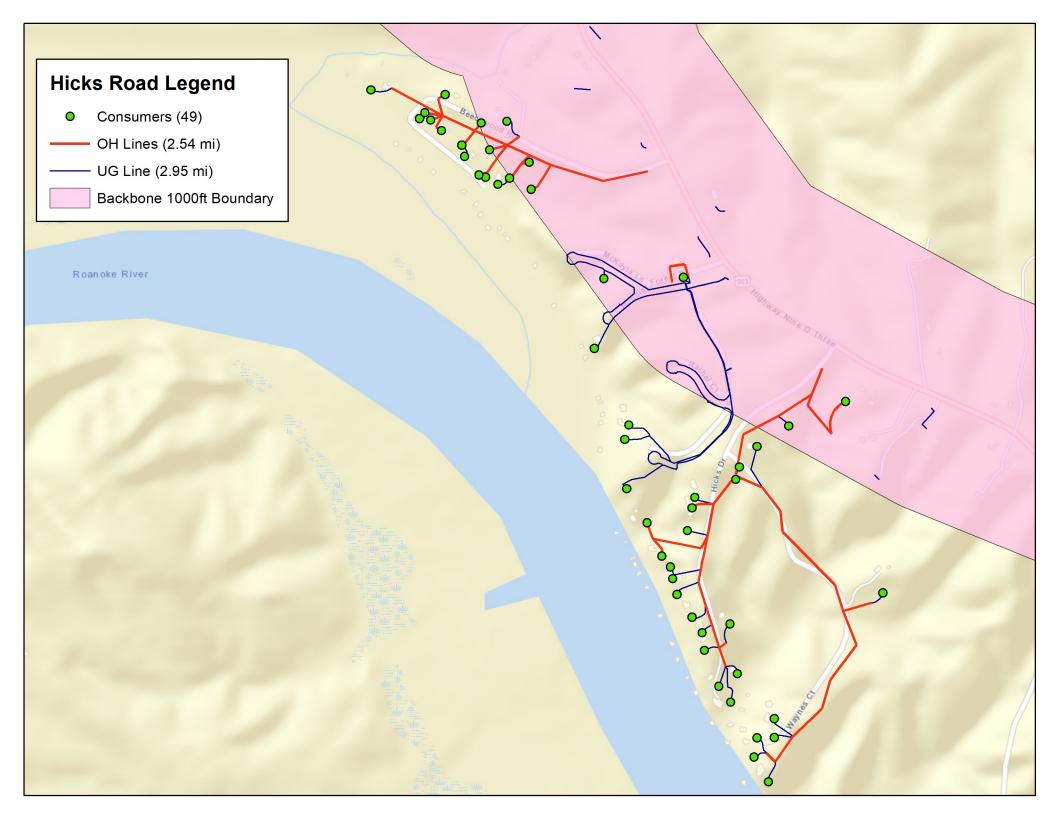
Scanof 2020 VATIPublic Notice Brunswick Halifax and Mecklenburg Counties MECEMPOWER 821201945208.pdf

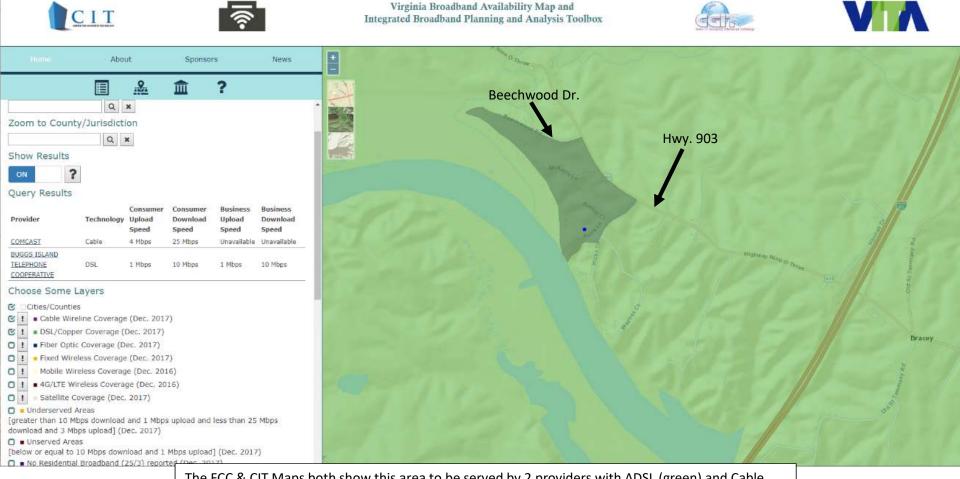
Optional

MarketingPortfolioPrintable8262019105312.pdf

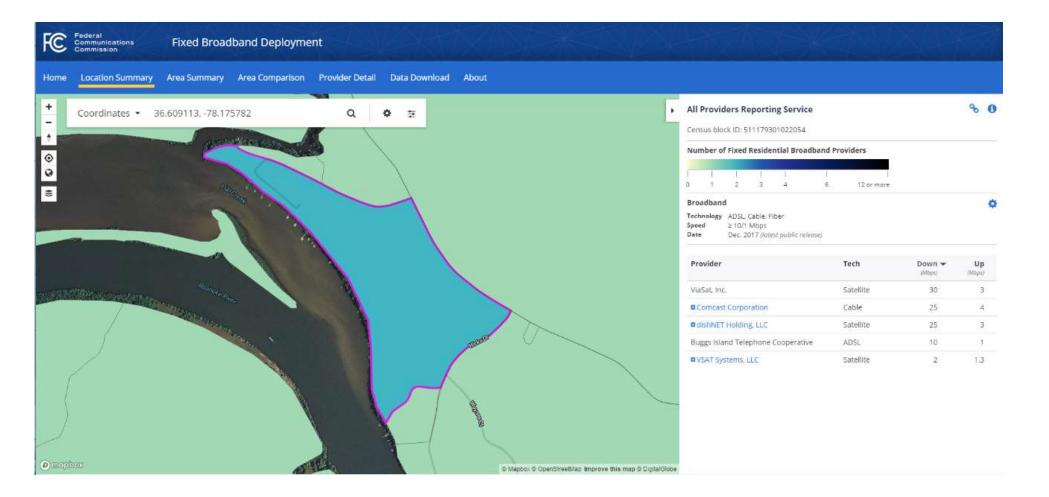
Optional

AdditionalCalixAttachment829201983545.pdf

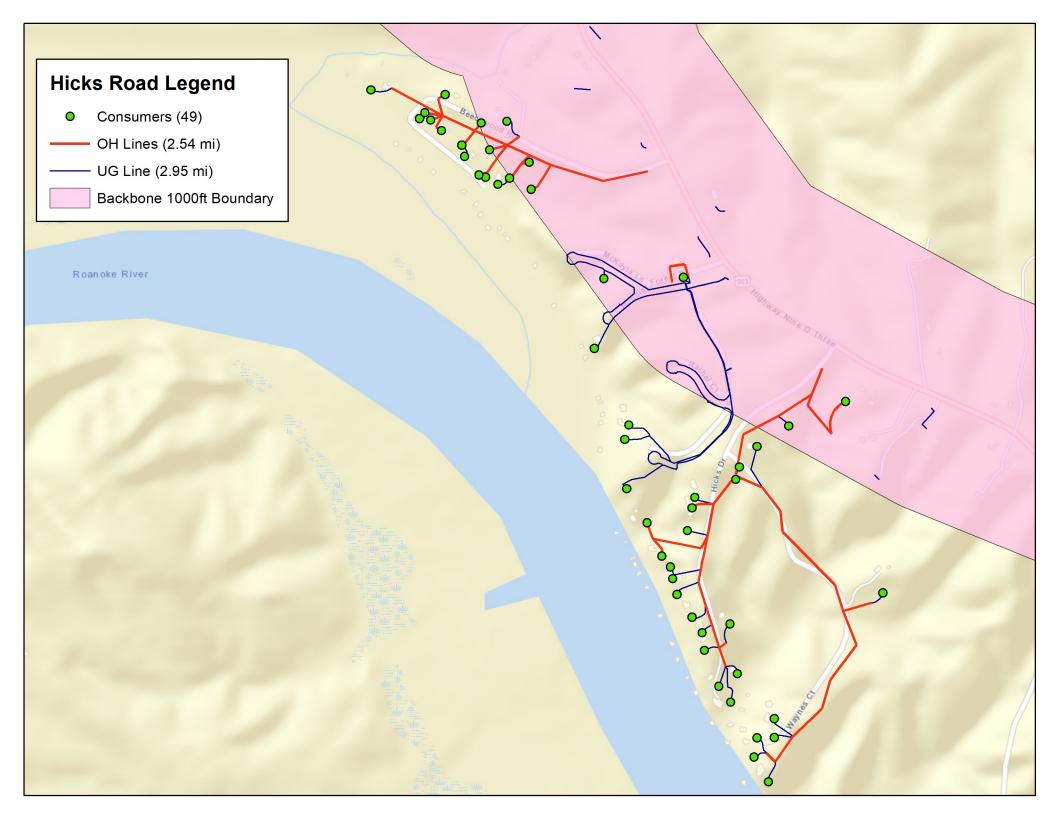


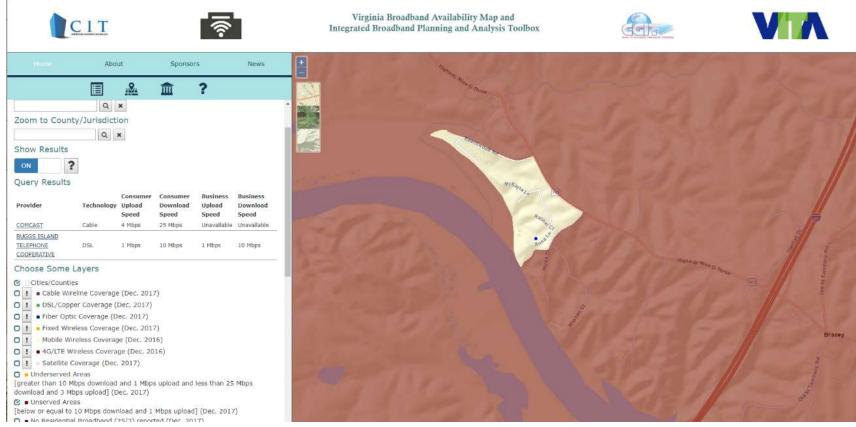


The FCC & CIT Maps both show this area to be served by 2 providers with ADSL (green) and Cable (purple). The ADSL provider, Buggs Island Telephone, was contacted and confirmed service in the area, but acknowledged that they were **unable to provide** the minimum 10/1 Mbps requirement; therefore, according to VATI definition, would be considered unserved. Efforts were made to contact the listed cable provider and after speaking to CIT staff, residents in the area and verification of the listed provider's website, it was determined that this area was reported in error as no service could be found (see picture below).



SHOP MY ACCOUNT SUPPORT MY XFINITY COMCAST BUSINESS	SIGN IN	SHOP MY ACCOUNT SUPPORT MY XFINITY COMCAST BUSINESS	SIGN IN
Xfinity Products ~ Bundles & Deals ~ Programming ~ Customers ~	Search Q Español	xfinity Products ~ Bundles & Deals ~ Programming ~ Customers ~	🛱 Search Q Español
(!)		(!)	
Unfortunately, XFINITY service is not available at this a	ddress.	Unfortunately, XFINITY service is not available at this	address.
We are unable to locate deals for 219 BEECHWOOD RD, 23919. To find a local provider, please contact Sm	artMove for assistance.	We are unable to locate deals for 493 BEECHWOOD RD, 23919. To find a local provider, please contact	t SmartMove for assistance.
Try a different address, including apartment number		Try a different address, including apartment number	
We couldn't find an online match for your address. Please call the SmartMove Hotline toil-free at (844) 544-5181 to find your servi provider If you want to search another address, please enter your info below.		We couldn't find an online match for your addres Please call the SmartMove Hotline toll-free at (844) 544-5181 to find your se provider If you want to search another address, please enter your info below.	
219 BEECHWOOD RD APT/UNIT 23919 Get Connected		493 BEECHWOOD RD APT/UNIT 23919 Get Connected	d →
Or give us a call 🤳 (844) 544-5181 powered by smort	tmove 🌬	Or give us a call 🤳 (844) 544-5181 powered by gr	nortmove D
I WANF TO		I WANT TO	





The FCC & CIT Maps both show this area to be unserved except for the cream-colored census block which is reported to have cable. To verify is this was indeed the case, several methods were utilized to contact the listed cable provider and after speaking to CIT staff, listed provider staff, residents in the area and verification of the listed provider's website, it was determined that this area was reported in error as no service could be found and that this census block should be considered unserved as well.

			Proposed Timeline												
Task	Responsible Person	Responsible Entity	December	January	February	March	April	May	June	July	August	September	October	November	December
Finalize VATI Bid award	D.Lipscomb	MEC/County													
Press Release of Award Notification to Local Newspaper	D. Lipscomb	MEC													
Social Media Release	D. Lipscomb	MEC													
Edit Basemap with final route fiber count, splice can location, splitter diagram	D. Long	MEC													
Finalize fiber count, splice can location, and splitter diagram	D. Long	MEC													
Create permit application drawings, VDOT/Railroad	B. Woods	MEC													
Engineering design assigned to Field Engineers for field review	J. Blair	Booth & Associates													
Finalize network electronic equipment list and release RFP	D.Long	MEC/EMPOWER													
Award electronics vendor bid	D. Long	MEC/EMPOWER													
Generate and release Construction and Materials RFP package	B. Seamans	MEC													
Social Media Project Progress Update	D. Lipscomb	MEC													
Community Meetings: Brunswick, Halifax, Mecklenburg Update & Digital Literacy	D. Lipscomb	MEC/EMPOWER													
Award construction and materials bid	B. Seamans	MEC													
Complete Fiber Engineering Design Edits	B. Woods	MEC													
Make Ready Engineering	B. Seamans	MEC													
Details of poles collected using Work Studio	J. Blair	Booth & Associates													
Details of all underground fiber route using Work Studio	J. Blair	Booth & Associates													
Make ready engineering evaluated for fiber placement	B. Seamans	MEC													
Make ready engineering finalized by MEC Field Engineering	B. Woods	MEC													
Final Construction Dept. and Engineering Field Review	B. Seamans	MEC													
Make Ready Construction Work Orders generated	J. Blair	Booth & Associates													
Permit drawings and Applications filed	B. Woods	MEC													
Splice sheets generated	B. Woods	MEC													
Bill of materials finalized	B. Seamans	MEC													
Direct Mailer #1 to Premises on pending make ready construction	D. Lipscomb	MEC													
Make Ready Construction	B. Seamans	MEC													
Press Release of Award Notification to Local Newspaper	D. Lipscomb	MEC													
Social Media Release	D. Lipscomb	MEC													
Community Meetings: Brunswick, Halifax, Mecklenburg Update & Digital Literacy	D. Lipscomb	MEC/EMPOWER													
Overall Construction of Outside Plant (OSP)	R. Lankford	DHE													
Stringing Block deployment to pull in Overhead ADSS Cable	R. Lankford	DHE													
ADSS overhead cable deployment	R. Lankford	DHE													
Underground cable deployment	R. Lankford	MEC													
Community Meetings: Brunswick, Halifax, Mecklenburg Update & Digital Literacy	D. Lipscomb	MEC/EMPOWER													
Installation of downline Splice Cans and Splitters	J. Belknap	N & S													
Direct Mailer #2 to Premises for early sign-up with \$50 or \$100 installation incentive	D. Lipscomb	MEC													
Site racks and equipment installed	B. Woods	MEC													
Test Network Electronics	D. Long	MEC/EMPOWER													
Commission data network for ONT Connection	D. Long	MEC/EMPOWER													
Installation of Access Class FTTH (Back Haul from Main Line to Drop)	B. Seamans	MEC													
Direct Mailer #3 Sign-up reminder	D. Lipscomb	EMPOWER													
Drop Installation	B. Seamans	MEC													
Home installation of ONT and NID	J. Belknap	Next Generation Electronics													
Door to Door visits with door knob hanger for those remaining eligible	D. Lipscomb	EMPOWER													
Press Release of Award Notification to Local Newspaper	D. Lipscomb	MEC													
Social Media Release	D. Lipscomb	MEC													
Community Meetings: Brunswick, Halifax, Mecklenburg Update & Digital Literacy	D. Lipscomb	EMPOWER													
Yard Sign Deployment at installed users	D. Lipscomb	EMPOWER													

Π	MEC-EMPOWER 2020 VA	ATI Timeline				
Task Name	Assigned MEC Manager	Responsible Individual	Responsible Entity	Start Date	Finish Date	Duration
Finalize VATI Bid award	D.Lipscomb			12/15/2019	12/18/2019	1 Weel
Press Release of Award Notification to Local Newspaper	D. Lipscomb	D. Winn	MEC	12/15/2019	12/20/2019	1 Weel
Social Media Release	D. Lipscomb	P. Whirley	MEC	12/15/2019		1 Weel
	Finalize Engineering D		1	, ,		
Edit Basemap with final route fiber count, splice can location, splitter diagram	D. Long	D. Long	MEC	12/15/2019	12/22/2019	1 Weel
Finalize fiber count, splice can location, and splitter diagram	D. Long	D. Long	MEC	12/15/2019	12/22/2019	1 Weel
Create permit application drawings, VDOT/Railroad	B. Woods	J. Blair	MEC	2/3/2020	2/28/2020	1 Month
Engineering design assigned to Field Engineers for field review	J. Blair	B. Buckner	Booth & Associates	1/13/2020		1.5 Month
Finalize network electronic equipment list and release RFP	D.Long	B. Soles	MEC/EMPOWER	1/15/2020	1/22/2020	1 Weel
Award electronics vendor bid	D. Long	B. Soles	MEC/EMPOWER	2/28/2020	2/29/2020	2 Days
Generate and release Construction and Materials RFP package	B. Seamans	R. Lankford	MEC	3/16/2020		5 Days
Social Media Project Progress Update	D. Lipscomb	P. Whirley	MEC	3/16/2020	3/20/2020	5 Days
Community Meetings: Brunswick, Halifax, Mecklenburg Update & Digital Literacy	D. Lipscomb	D. Francis	MEC/EMPOWER	3/15/2020		1 Week
Award construction and materials bid	B. Seamans	R. Lankford	MEC	4/1/2020		1 Day
	er Design and Make Ready De		11120	1/2/2020	1/2/2020	100)
Complete Fiber Engineering Design Edits	B. Woods	J. Blair	MEC	1/13/2020	2/28/2020	1.5 Months
Make Ready Engineering	B. Seamans	J. Blair	MEC	1/13/2020	2/28/2020	1.5 Months
Details of poles collected using Work Studio	J. Blair	B. Buckner	Booth & Associates	1/13/2020	2/28/2020	1.5 Months
Details of all underground fiber route using Work Studio	J. Blair	B. Buckner	Booth & Associates	1/13/2020		1.5 Months
Make ready engineering evaluated for fiber placement	B. Seamans	B. Woods	MEC	1/13/2020	2/28/2020	1.5 Months
Make ready engineering finalized by MEC Field Engineering	B. Woods	J. Blair	MEC	3/2/2020	3/6/2020	5 Days
Final Construction Dept. and Engineering Field Review	B. Seamans	R. Lankford	MEC	3/9/2020	3/13/2020	5 Days
	ailed Design Complete/Make R		IVIEC	5/5/2020	5/15/2020	5 Days
Make Ready Construction Work Orders generated	J. Blair	B. Buckner	Booth & Associates	3/2/2020	3/6/2020	5 Days
Permit drawings and Applications filed	B. Woods	J. Blair	MEC	3/2/2020		5 Days
Splice sheets generated	B. Woods	J. Belknap	MEC	5/1/2020	5/29/2020	1 Month
Bill of materials finalized	B. Seamans	J. Blair	MEC	3/16/2020	3/20/2020	5 Days
Direct Mailer #1 to Premises on pending make ready construction	D. Lipscomb	P. Whirley	MEC	2/15/2020	2/22/2020	1 Week
Make Ready Construction	B. Seamans	B. Woods	MEC	3/2/2020		3 Months
Press Release of Award Notification to Local Newspaper	D. Lipscomb	D. Winn	MEC	4/15/2020	4/20/2020	1 Week
Social Media Release	D. Lipscomb	P. Whirley	MEC	4/15/2020	4/20/2020	1 Week
Community Meetings: Brunswick, Halifax, Mecklenburg Update & Digital Literacy	D. Lipscomb	D. Francis	MEC/EMPOWER	5/15/2020		1 Week
Community Meetings. Brunswick, Hamax, Meekienburg Opuate & Digital Literacy	Construction of Outside P			5/15/2020	5/22/2020	IWeer
Overall Construction of Outside Plant (OSP)	R. Lankford	P. Sopko	DHE	6/1/2020	12/15/2020	6.5 Months
Stringing Block deployment to pull in Overhead ADSS Cable	R. Lankford	P. Sopko	DHE	6/1/2020	10/30/2020	5 Months
ADSS overhead cable deployment	R. Lankford	P. Sopko	DHE	6/15/2020	11/20/2020	5 Months
Underground cable deployment	R. Lankford	R. Lankford	MEC	6/15/2020	11/20/2020	5 Months
Community Meetings: Brunswick, Halifax, Mecklenburg Update & Digital Literacy	D. Lipscomb	D. Francis	MEC/EMPOWER	7/15/2020	7/22/2020	1 Week
Installation of downline Splice Cans and Splitters	J. Belknap	A. Gibson	N & S	8/3/2020	12/15/2020	4.5 Months
Direct Mailer #2 to Premises for early sign-up with \$50 or \$100 installation incentive	D. Lipscomb	P. Whirley	MEC	8/15/2020	8/22/2020	1 Week
Site racks and equipment installed	B. Woods	J. Belknap	MEC	9/14/2020		2 Weeks
Test Network Electronics	D. Long	B. Soles	MEC/EMPOWER	9/15/2020	9/25/2020	2 Weeks
Commission data network for ONT Connection	D. Long	B. Soles	MEC/EMPOWER	9/26/2020		1 Week
			-		10/2/2020	
Installation of Access Class FTTH (Back Haul from Main Line to Drop)	B. Seamans Drop, NID, ONT Instal	R. Lankford	MEC	8/3/2020	12/15/2020	4.5 Months
Direct Mailer #3 Sign-up reminder	D. Lipscomb	P. Whirley	EMPOWER	9/7/2020	9/14/2020	1 Weel
Drop Installation	B. Seamans	R. Lankford	MEC	8/3/2020	12/15/2020	4.5 Months
			Next Generation	0/3/2020	12/13/2020	
Home installation of ONT and NID	J. Belknap	L. Fleshman	Electronics	9/1/2020	12/15/2020	3.5 Month
			EMPOWER	9/1/2020	9/15/2020	
Door to Door visits with door knob hanger for remaining eligible	D. Lipscomb	P. Lawson				1 Wee
Press Release of Award Notification to Local Newspaper	D. Lipscomb	D. Winn	MEC	8/15/2020	8/20/2020	1 Wee
Social Media Release	D. Lipscomb	P. Whirley	MEC	8/15/2020		1 Wee
Community Meetings: Brunswick, Halifax, Mecklenburg Update & Digital Literacy	D. Lipscomb	D. Francis	EMPOWER	9/15/2020		1 Wee
Yard Sign Deployment at installed users	D. Lipscomb	D. Francis	EMPOWER	9/1/2020	12/15/2020	3.5 Month



Mecklenburg County Board of Supervisors

Post Office Box 307 • Noydton, Nirginia 23917

BOARD OF SUPERVISORS Glenn Barbour Chairman Gregg Gordon Vice-Chairman David Brankley Andy Hargrove Jim Jennings Claudia H. Lundy Glanzy M. Spain, Jr. Dan Tanner Sterling Wilkinson

H. Wayne Carter III County Administrator Emergency Services Director

August 22, 2019

Mr. John Lee, Jr. Mecklenburg Electric Cooperative/EMPOWER Broadband P.O. Box 2451 Chase City, VA 23924

RE: DHCD VATI Grant Applications

Dear Mr. Lee,

At the request of Mecklenburg Electric Cooperative/EMPOWER Broadband at the August 12, 2019, regular monthly meeting, the Mecklenburg County Board of Supervisors approved submission of a Virginia Telecommunication Initiative (VATI) grant application being offered through the Department of Housing and Community Development (DHCD).

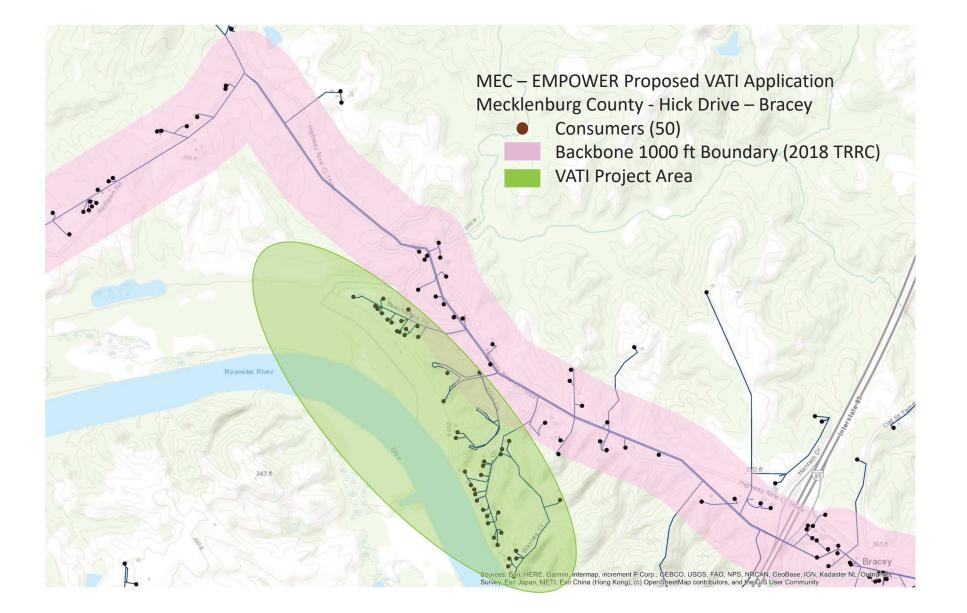
Please find attached a copy of the potential project coverage map for extending high-speed broadband to approximately 50 homes in the Beechwood, Hundley Forest and Hicks Hill Subdivisions.

The preparation and completion of grant documentation will be supplied to DHCD in a timely manner in order to meet the grant deadline of September 3, 2019. Additionally, MEC/EMPOWER will cover all costs for the grant application and for the implementation of the grant projects.

We are pleased to be working with you again and I look forward to learning of approval of the grant application. Please let me know if you have any questions.

Sincerely,

H. Wayne Carter, III. County Administrator





Mecklenburg County Public Schools

Post Office Box 190 · 175 Mayfield Drive · Boydton, Virginia 23917 Phone: (434) 738-6111 Fax: (434) 738-6679

Mr. Paul Nichols Division Superintendent

Paula Giammatteo Clerk

August 19, 2019

Department of Housing & Community Development C/O VATI Grant Administrator 600 East Main Street, Suite 300 Richmond, VA 23219 SCHOOL BOARD MEMBERS Dale Sturdifen Chairman

> Gavin Honeycutt Vice Chairman

> Brent Richey Wanda Bailey Lindell Palmer Rob Campbell Dora Garner Kenneth Johnson Glenn Edwards

Dear Virginia Department of Housing and Community Development:

I am writing this letter on behalf of Mecklenburg Electric Cooperative (MEC). As a resident of Mecklenburg County, Virginia, and Superintendent of Mecklenburg County Public Schools, I would like to express my full support of the Virginia Telecommunications Initiative (VATI) grant application for Mecklenburg County, Mecklenburg Electric Cooperative and EMPOWER Broadband. MEC has a long and successful history of providing services in the areas they serve in Virginia for over 75 years and has a strong reputation for customer service and community commitment. I am confident in Mecklenburg Electric Cooperative's capabilities for enhancing broadband service for my neighbors in Mecklenburg County.

With this grant, Mecklenburg Electric Cooperative and EMPOWER Broadband will enhance our broadband connectivity with a fiber network design. This fiber build will enable us to overcome some geographical distances, empower us through information, and bring the world to us through a simple stroke of a keyboard. As an unserved rural area with limited Internet services, we face many challenges including limited medical resources and distance between patients, physicians, specialists, and facilities. Because of the rural nature of our area, our students do not receive equitable broadband resources as other students in more urban learning centers. We are lacking the research, distance learning, video, and other tools that advanced broadband can bring to our students. Therefore, it is extremely important that VATI grant funding be obtained to provide for much-needed broadband service to our area.

I strongly urge the Department of Housing and Community Development to fund this VATI grant application, not only will this help with sustaining the future of advanced broadband services in Mecklenburg Electric Cooperative's proposed service area, but also promoting the future economic stability of our community.

Sincerely,

al CNn total

Paul C. Nichols Superintendent, Mecklenburg County Public Schools (434) 738-6111



Dr. Betty Adams EXECUTIVE DIRECTOR

bettyadams@svhec.org 4 3 4 . 5 7 2 . 5 5 5 1



August 19, 2019

Department of Housing & Community Development C/O VATI Grant Administrator 600 East Main Street, Suite 300 Richmond, VA 23219

Dear Virginia Department of Housing and Community Development:

I am writing this letter on behalf of Mecklenburg Electric Cooperative (MEC). As a resident of Halifax County, Virginia, and Executive Director of the Southern Virginia Higher Education Center, located in Halifax County, I would like to express my full support of the Virginia Telecommunications Initiative (VATI) grant application for Halifax County, Mecklenburg Electric Cooperative and EMPOWER Broadband. MEC has a long and successful history of providing services in the areas they serve in Virginia for over 75 years and has a strong reputation for customer service and community commitment. I am confident in Mecklenburg Electric Cooperative's capabilities for enhancing broadband service for my neighbors in Halifax County.

With this grant, Mecklenburg Electric Cooperative and EMPOWER Broadband will enhance our broadband connectivity with a fiber network design. This fiber build will enable us to overcome some geographical distances, empower us through information, and bring the world to us through a simple stroke of a keyboard. As an unserved rural area with limited Internet services, we face many challenges including limited medical resources and distance between patients, physicians, specialists and facilities. Because of the rural nature of our area, our students do not receive equitable broadband resources as other students in more urban learning centers. We are lacking the research, distance learning, video and other tools that advanced broadband can bring to our students. Therefore, it is extremely important that VATI grant funding be obtained to provision for much needed broadband service to our area.

I strongly urge the Department of Housing and Community Development to fund this VATI grant application, not only will this help with sustaining the future of advanced broadband services in Mecklenburg Electric Cooperative's proposed service area, but also promoting the future economic stability of our community.

Sincerely,

Batty & adams

Betty H. Adams, Ed.D, MBA Executive Director Southern Virginia Higher Education Center

Toll-Free 800.283.0098 • Phone 434.572.5440 • www.svhec.org 820 Bruce Street • South Boston, VA • 24592



August 20, 2019

Department of Housing & Community Development C/O VATI Grant Administrator 600 East Main Street, Suite 300 Richmond, VA 23219

RE: Virginia Telecommunications Initiative (VATI)

I am writing this letter on behalf of Mecklenburg Electric Cooperative (MEC). As President of Southside Virginia Community College, I would like to express my full support of the Virginia Telecommunications Initiative (VATI) grant application for the surrounding counties, Mecklenburg Electric Cooperative and EMPOWER Broadband. MEC has a long and successful history of providing services in the areas they serve in Virginia for over 75 years, and has a strong reputation for customer service and community commitment. I am confident in Mecklenburg Electric Cooperative's capabilities for enhancing broadband service to this region.

With this grant, Mecklenburg Electric Cooperative and EMPOWER Broadband will enhance our broadband connectivity with a fiber network design. This fiber build will enable us to overcome some geographical distances, empower us through information, and bring the world to us through a simple stroke of a keyboard. As unserved rural areas with limited Internet services, we face many challenges including limited medical resources and distance between patients, physicians, specialists and facilities. Because of the rural nature of our areas, our students do not receive equitable broadband resources as other students in more urban learning centers. We are lacking the research, distance learning, video and other tools that advanced broadband can bring to our students. Therefore, it is extremely important that VATI grant funding be obtained to provide for much needed broadband service to our area.

I strongly urge the Department of Housing and Community Development to fund this VATI grant application, not only will this help with sustaining the future of advanced broadband services in Mecklenburg Electric Cooperative's proposed service area, but also promoting the future economic stability of our community.

Sincerely, phron Juentin'R. Johnson, Ph.D

President

QRJ/aj

Christanna Campus 109 Campus Drive, Alberta, VA 23821434-949-1000

John H. Daniel Campus 200 Daniel Road, Keysville, VA 23947 434-736-2000

 Southside Virginia Education Center
 1300 Greensville County Circle, Emporia, VA 23847
 434-634-9358

 Southern Virginia Higher Education Center
 820 Bruce Street, South Boston, VA 24592
 434-572-5451

 Estes Community Center
 316 N. Main Street, Chase City, VA 23924
 434-372-0194

 Lake Country Advanced Knowledge Center
 118 E. Danville Road, South Hill, VA 23970
 434-955-2252

 Occupational Technical Center
 Pickett Park, 1041 W. 10th Street, Blackstone, VA 23824
 434-292-3101

 Cumberland County Community Center
 1874 Anderson Highway, Cumberland, VA 23040
 804-492-9275

HEADQUARTERS

P. O. Box 2451 Chase City, VA 23924 *Phone:* 434-372-6100/*Fax:* 434-372-6101

CHASE CITY DISTRICT

P. O. Box 2451 Chase City, VA 23924 *Phone:* 434-372-6200/*Fax:* 434-372-6201



Your Touchstone Energy Partner ***1** www.meckelec.org SAFETY FIRST!

EMPORIA DISTRICT

P. O. Box 427 Emporia, VA 23847 Phone: 434-634-6168/Fax: 434-348-7100

GRETNA DISTRICT

P. O. Box 617 Gretna, VA 24557 Phone: 434-656-1288/Fax: 434-656-9200

August 20, 2019

Erik C. Johnston Virginia Department of Housing and Community Development ATTN: Virginia Telecommunications Initiative 600 East Main Street, Suite 300 Richmond, VA 23219

Dear Mr. Johnston,

This letter is to document Mecklenburg Electric Cooperative's (MEC) in-kind match for three Virginia Telecommunications Initiative Last Mile Grant Applications submitted by MEC and our affiliate EMPOWER Broadband, INC.

MEC and EMPOWER Broadband, INC. will provide funding to expand our fiber optic network; these investments are being presented for the in-kind match for each application, respectively. The project area, MEC's match, and the VATI request are listed below.

Project Area	MEC/EMPOWER Match	VATI Request
Halifax County	\$2,013,819	\$1,033,398
Brunswick County	\$444,259	\$366,206
Mecklenburg County	\$116,061	\$56,200

The Cooperative has approved these expenditures as in-kind matching funds upon a successful grant award.

Respectfully,

John C. Lee, Jr. President and CEO Mecklenburg Electric Cooperative

Confidential and Proprietary – Not for Public View



National Rural Utilities Cooperative Finance Corporation

Copy !

2201 Cooperative Way Herndon, Virginia 20171-3025 703-709-6700 | www.nrucfc.coop

A Touchstone Energy* Cooperative 🔊

November 29, 2006

Mr. M. John Bowman President and CEO Mecklenburg Electric Cooperative 11633 Hwy 92 Chase City, VA 23924



Re: Line of Credit # VA031-P-5102

Dear Mr. Bowman:

Your cooperative has executed and returned all required CFC documents and supporting papers in connection with the Line of Credit designated above. These documents have been reviewed and found legally acceptable and satisfactory to CFC and thus constitute a binding agreement between CFC and your cooperative.

Enclosed, for your records, is a copy of the fully executed Line of Credit Agreement. Line of Credit funds may now be requisitioned in accordance with the terms of the Line of Credit Agreement.

We at CFC appreciate the opportunity to serve your system and look forward to our continued business relationship.

Sincerely,

David OR

David Olah Associate Vice President

Enclosure

National Rural Utilities Cooperative Finance Corporation Perpetual Line of Credit Agreement ("Agreement")

Name of Borrower: Mecklenburg Electric Cooperative

Address: PO Box 2451, 11633 Hwy 92, Chase City, Virginia 23924

National Rural Utilities Cooperative Finance Corporation ("CFC"), a District of Columbia corporation, has approved Borrower for a revolving line of credit loan in an amount not to exceed Nine Million Two Hundred Thousand Dollars (\$9,200,000.00) (hereinafter referred to as the "CFC Commitment"). Borrower hereby agrees that the terms and conditions herein, plus any additional terms and conditions agreed to in writing by the parties, shall constitute a valid and binding agreement between Borrower and CFC. In consideration of their mutual promises hereunder and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, CFC and Borrower agree to the following terms and conditions:

- 1. Revolving Credit and Term. CFC agrees to advance funds to the Borrower pursuant to the terms and conditions hereof (each such advance of funds is referred to herein as an "Advance"), provided, however, that the amount at any time outstanding under this line of credit shall not exceed the CFC Commitment. The Borrower may borrow, repay and reborrow funds at any time or from time to time for a period up to twelve (12) months from the effective date hereof. This Agreement shall thereafter automatically renew for subsequent periods of twelve (12) months each. Either party may terminate this Agreement at the end of any period by providing written notice to the other party at least ninety (90) days prior to the expiration of such period.
- **2. Requisitions.** Requests for Advances shall be in such written form as CFC may reasonably require from time to time.
- 3. Interest Rate and Payment. The Borrower unconditionally promises and agrees to pay, as and when due, interest on all amounts advanced hereunder from the date of each Advance and to repay all amounts advanced hereunder with interest on the date this Agreement terminates as provided herein. Interest shall be due and payable in accordance with CFC's regular billing cycles as may be in effect from time to time. CFC shall send a payment notice to the Borrower at least five days prior to the due date of any interest payment. All amounts shall be payable at CFC's main office at Woodland Park, 2201 Cooperative Way, Herndon, Virginia 20171-3025 or at such other location as designated by CFC from time to time. The interest rate on all Advances will be equal to the total rate per annum as may be fixed by CFC from time to time, which shall not exceed the Prevailing Bank Prime Rate (as defined herein), plus one percent per annum. Interest will be computed on the basis of a 365 day year for the actual number of days that any

Advance is outstanding. The effective date of an interest rate adjustment will be determined from time to time by CFC, provided that no such adjustment may be effective on a date other than the first or sixteenth day of any month, and any such adjustment shall remain in effect until any subsequent change in the interest rate occurs.

The "Prevailing Bank Prime Rate" is that bank prime rate published in the "Money Rates" column of the eastern edition of *The Wall Street Journal* on the publication day immediately preceding the day on which an adjustment in the interest rate hereof shall become effective. If *The Wall Street Journal* shall cease to be published, then the Prevailing Bank Prime Rate shall be determined by CFC by reference to another publication reporting bank prime rates in a similar manner.

4. Mandatory Prepayment. If (a) there is a change in the Borrower's corporate structure (including without limitation by merger, consolidation, conversion or acquisition), and (b) after giving effect to such change, Borrower (i) would not be eligible to receive a loan or commitment for a loan from the Rural Utilities Service or any successor agency, or (ii) would no longer engage in the furnishing of utility services to its members and patrons for their use as ultimate consumers, then upon the effective date of such change, the Borrower shall prepay the outstanding principal balance of all Obligations, together with any accrued but unpaid interest thereon, any unpaid costs or expenses provided for herein, and a prepayment premium prescribed by CFC pursuant to its policies of general application in effect from time to time.

"Obligations" shall mean any and all liabilities, obligations or indebtedness owing by the Borrower to CFC, of any kind or description, irrespective of whether for the payment of money, whether direct or indirect, absolute or contingent, due or to become due, now existing or hereafter arising.

- 5. CFC Accounts. CFC shall maintain in accordance with its usual practices an account or accounts evidencing the indebtedness of the Borrower resulting from each Advance and the amounts of principal and interest payable and paid hereunder. In any legal action or proceeding in respect of this Agreement, the entries made in such account or accounts (whether stored on computer memory, microfilm, payment notices or otherwise) shall be presumptive evidence (absent manifest error) of the existence and amounts of the Borrower's transactions therein recorded.
- 6. Corporate and Regulatory Approvals. Borrower represents and warrants that it has obtained any and all necessary corporate and regulatory approvals for Borrower to execute, deliver and perform its obligations under this Agreement.
- 7. **Reports.** During the term of this Agreement, Borrower agrees (a) to provide CFC, within 120 days of the end of Borrower's fiscal year, its annual financial statements, prepared in accordance with generally accepted accounting principles ("GAAP") and audited by an independent certified public accountant, or otherwise in form and substance satisfactory to CFC, and (b) to provide CFC with any other reports or information which CFC may from time to time reasonably request.
- 8. Fees. If any amount outstanding and due hereunder shall not be paid when due, Borrower agrees to pay on demand CFC's reasonable costs of collection or enforcement

of this Agreement, or preparation therefor, including reasonable fees of counsel. If payment of any principal and/or interest due under the terms of this Agreement is not received at CFC's office in Herndon, Virginia, or such other location designated by CFC within 5 business days after the due date thereof, then Borrower shall pay to CFC, on demand, and in addition to all other amounts due under the terms of this Agreement, any late-payment and additional interest charges as may then be in effect pursuant to CFC's then current policies without setoff or counterclaim. For purposes of this Agreement, a "business day" means a day that both CFC and the financial institution it employs for funds remittance are open for business.

- 9. Limitation on Advances. While an Advance is outstanding, CFC reserves the right to limit further Advances if the sum of (a) all Advances outstanding, (b) the amount of any further Advance requested, and (c) the total amount of Borrower's other unsecured outstanding debt, would exceed the CFC Commitment. CFC may also, in its sole discretion decline to make any Advance during any period when the Borrower is in default hereunder.
- 10. Paydown Requirement. For each 12-month period while this Agreement is in effect, Borrower shall, for a period of at least five consecutive business days, pay down the entire outstanding principal balance on this line of credit ("Paydown"). Borrower shall make the initial Paydown within 360 days of the first Advance hereunder, and shall make each subsequent Paydown within 360 days of the date of the first Advance following each Paydown.
- **11. Credit Support**. With CFC's prior written approval, this Agreement may be used as credit support for other financings.
- 12. Notices, Acceleration of Debt and Waivers. While an Advance is outstanding, Borrower agrees to notify CFC in writing of (a) any delinquency or default on any of its financial obligations, (b) any material adverse change in its financial or business condition, and (c) if any representation or warranty made in this Agreement is no longer true in any material respect. If any delinquency, default, or any other event as a result of which any holder of indebtedness may declare the same due and payable shall occur and continue uncorrected for more than any applicable grace period, or any representation or warranty herein shall no longer be true, or Borrower shall fail to perform or to comply with any term of this Agreement, or if the financial condition of Borrower shall have changed to the extent that such change, in the reasonable judgment of CFC, materially increases CFC's risk of repayment hereunder, then CFC may declare at any time all outstanding principal, interest and other amounts due hereunder immediately due and payable in full with accrued interest, without presentment or demand, and may withhold Advances. The Borrower waives the defense of usury and all rights to setoff, counterclaim, deduction or recoupment.
- **13.** Survival of Representations and Warranties and Payment Obligations. Borrower agrees that its obligation to repay principal, interest and all other amounts due hereunder, and the representations and warranties made herein, shall survive termination of this Agreement. Borrower further agrees that such repayment obligations shall be automatically reinstated if and to the extent that for any reason any payment by or on

behalf of the Borrower is rescinded, set aside or must be otherwise restored, whether as a result of any proceeding in bankruptcy or reorganization or otherwise.

- **14. Representations and Warranties.** Borrower represents and warrants that as of the date of its application for this line of credit, and on the date of each Advance hereunder:
 - a) the Borrower is not in default of any of its financial obligations;
 - b) there has been no material adverse change in the Borrower's business or financial condition from that set forth in its most recent audited financial statements;
 - c) no litigation is pending or, to the best of Borrower's knowledge, threatened against the Borrower which, if adversely determined, would have a material adverse effect on the Borrower's ability to perform under this Agreement;
 - d) the information contained in Borrower's audited financial statements, its other financial reports and information otherwise submitted in connection with this Agreement is complete and accurate, and said financial statements and financial reports fairly represent the financial condition of the Borrower as of the dates reflected thereon;
 - e) the execution, delivery and performance of this Agreement has been duly authorized by the Borrower, which authorization has not been rescinded or modified;
 - f) all Advances hereunder will be used only for proper corporate purposes;
- **15. Conditions of Lending.** As a condition to CFC making Advances hereunder, each of the following conditions shall be satisfied at the time of each Advance:
 - a) CFC shall have received the Borrower's most recent annual financial statements, prepared in accordance with GAAP and audited by an independent certified public accountant, or otherwise in form and substance satisfactory to CFC;
 - b) all representations and warranties set forth herein shall be true and correct; and
 - c) the Borrower shall have obtained any and all necessary corporate, regulatory and governmental approvals for the Borrower to execute, deliver and perform its obligations under this Agreement.

16. GOVERNING LAW; SUBMISSION TO JURISDICTION; WAIVER OF JURY TRIAL.

- (a) THE PERFORMANCE AND CONSTRUCTION OF THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE COMMONWEALTH OF VIRGINIA.
- (b) BORROWER HEREBY SUBMITS TO THE NONEXCLUSIVE JURISDICTION OF THE UNITED STATES COURTS LOCATED IN VIRGINIA AND OF ANY STATE COURT SO LOCATED FOR PURPOSES OF ALL LEGAL PROCEEDINGS ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY. BORROWER IRREVOCABLY

WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY OBJECTION THAT IT MAY NOW OR HEREAFTER HAVE TO THE ESTABLISHING OF THE VENUE OF ANY SUCH PROCEEDING BROUGHT IN SUCH A COURT AND ANY CLAIM THAT ANY SUCH PROCEEDING HAS BEEN BROUGHT IN AN INCONVENIENT FORUM.

- (c) EACH OF THE BORROWER AND CFC HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.
- **17. Severability.** If any term, provision or condition, or any part thereof, of this Agreement shall for any reason be found or held invalid or unenforceable by any court or governmental agency of competent jurisdiction, such invalidity or unenforceability shall not affect the remainder of such term, provision or condition nor any other term, provision or condition, and this Agreement shall survive and be construed as if such invalid or unenforceable term, provision or condition had not been contained herein.
- 18. Setoff. Upon the occurrence and during the continuance of any default, CFC is hereby authorized at any time and from time to time without prior notice to the Borrower to exercise rights of setoff or recoupment and apply any and all amounts held, or hereafter held, by CFC or owed to the Borrower or for the credit or account of the Borrower against any and all of the obligations of the Borrower now or hereafter existing hereunder. CFC agrees to notify the Borrower promptly after any such setoff or recoupment and the application thereof, provided that the failure to give such notice shall not affect the validity of such setoff, recoupment or application. The rights of CFC under this section are in addition to any other rights and remedies (including other rights of setoff or recoupment) which CFC may have.
- **19.** Additional Terms and Conditions. Additional terms and conditions as set forth herein or attached hereto are an integral part of this Agreement.
- **20. Termination and Cancellation of Existing Agreement.** Borrower agrees that its existing line(s) of credit No(s). VA031-R-5101 with CFC, and any agreement(s) relating thereto shall be terminated and any outstanding principal, interest and other amounts outstanding thereunder shall be transferred to the line of credit established pursuant to this Agreement and deemed an Advance hereunder.
- 21. Miscellaneous. (a) This Agreement contains the entire agreement of the parties hereto with respect to the matters covered and the transactions contemplated hereby, and no other agreement, statement or promise made in connection with this line of credit by any party hereto, or by any employee, officer, agent or attorney of any party hereto which is not contained herein shall be valid and binding. (b) Any amendment to this Agreement must be in writing signed by both parties. (c) No failure or delay by CFC in exercising any right or remedy hereunder shall operate as a waiver or preclude the future exercise thereof or of any other right or remedy. (d) If any payment is due from Borrower on a day which CFC is not open for business, then such payment shall be made on the next succeeding day on which CFC is open for business.

22. Notices. All notices, requests and other communications provided for herein including, without limitation, any modifications of, or waivers, requests or consents under, this Agreement shall be given or made in writing (including, without limitation, by telecopy) and delivered to the intended recipient at the "Address for Notices" specified below; or, as to any party, at such other address as shall be designated by such party in a notice to each other party. Except as otherwise provided in this Agreement, all such communications shall be deemed to have been duly given when personally delivered or, in the case of a telecopied or mailed notice, upon receipt, in each case given or addressed as provided for herein. The Address for Notices of the respective parties are as follows:

CFC:

National Rural Utilities Cooperative Finance Corporation 2201 Cooperative Way Herndon, Virginia 20171-3025 Attention: Senior Vice President - Member Services Fax: (703) 709-6776

The Borrower: Mecklenburg Electric Cooperative PO Box 2451, 11633 Hwy 92 Chase City, VA 23924 Attention: President and Chief Executive Officer Fax: (434) 372-6101

23. Additional Terms and Conditions.

- (a) Prior to and as a condition of making the initial Advance, CFC shall have been furnished with an opinion of counsel for Borrower addressing such legal matters as CFC shall reasonably require.
- (b) CFC hereby agrees to reserve \$90,000.00 hereunder to back potential obligations of Borrower to the Virginia Department of Transportation ("VDOT"). To access the reserved funds, Borrower will need to submit documentation in form and substance acceptable to CFC that confirms that proceeds of Advances from the reserved portion are to be used solely to make payment on its obligations to VDOT. Such documentation will include, but not be limited to the appropriate notification from VDOT that Borrower owes payment to VDOT which payment has not been made within a specified timeframe, that such non-payment default has not been cured within any applicable grace period and that VDOT has demanded payment to cure such default.

The reservation in availability will remain in place until Borrower submits a written request in form and substance satisfactory to CFC, confirming that it is no longer necessary for the reservation to remain in effect.

MECKLENBURG ELECTRIC COOPERATIVE
Signed By:
Title: Chairman of the Board
Date Signed: November 15, 2006
NATIONAL RURAL UTILITIES COOPERATIVE FINANCE CORPORATION
By: Dan, d NR Loan Number: VA031-P-5102
Assistant Secretary-Treasurer
DAVID W OLAH

(To be filled in by CFC) The effective date of this Agreement is: 11/29/06.

ŝ,

VATI FUNDING SOURCES TABLE

Please fill in the chart below with a description of the project funding source (local, federal, state, private, other), the amount from that source, the percentage of total project funding that source represents, and a description of the current status of the funds (pending, secured, etc.).

Source	Amount	%	Status
REQUESTED VATI	\$ 56,200	33.0	Pending
MEC (private)	\$ 116,061	67.0	APPROVED
	\$		
	\$		
	\$		
	\$		
	\$		
TOTAL	\$ 172,260	100 %	

CDBG Derivation of Cost

Mecklenburg Co. Attachment #11 - Derivation of Costs

Product	Total	VATI	Non-VATI	Source of Estimate	Date
EXAMPLE					
Construction					
200 LF of fiber @\$150/LF	\$30,000	\$15,000	\$15,000	Company A	9/5/2016
Tower	\$100,000	\$80,000	\$20,000	Company B	9/5/2016
Engineering	\$20,000	\$0	\$20,000	ABC Engineering Firm	9/5/2016

Product	7	Fotal	VA	TI	No	n-VATI	Source of Estimate	Date
Drop Installation Cost	\$	-	\$	-	\$	-		
Outdoor Wall Mount Labor	\$	1,265	\$	-	\$	1,265	MEC based on 2018-19 projects	
Outdoor Wall Mount Materials	\$	571	\$	-	\$	571	MEC based on 2018-19 projects	
Splicing Labor	\$	1,426	\$	-	\$	1,426	MEC based on 2018-19 projects	
Splicing Materials	\$	8	\$	-	\$	8	MEC based on 2018-19 projects	
Staking Labor	\$	1,054	\$	-	\$	1,054	MEC based on 2018-19 projects	
ONT (router) labor	\$	8,050	\$	-	\$	8,050	MEC based on 2018-19 projects	
ONT (router) materials	\$	5,831	\$	-	\$	5,831	MEC based on 2018-19 projects	
Aerial Construction Costs	\$	-	\$	-	\$	-		

Aerial Construction Labor	\$ 63,001	\$ 35,281	\$ 27,721	MEC based on 2018-19 projects	
Aerial Materials	\$ 30,828	\$ 17,264	\$ 13,565	MEC based on 2018-19 projects	
Underground Construction Costs	\$ -	\$ -	\$ -		
Underground Construction Labor	\$ 4,026	\$ 2,255	\$ 1,772	MEC based on 2018-19 projects	
Underground Materials	\$ 2,501	\$ 1,400	\$ 1,100	MEC based on 2018-19 projects	
Access Construction Costs	\$ -	\$ -	\$ -		
Access Construction Labor	\$ 36,220		\$ 36,220	MEC based on 2018-19 projects	
Access Materials	\$ 17,479	\$ -	\$ 17,479	MEC based on 2018-19 projects	
TOTAL	\$ 172,260	\$ 56,200	\$ 116,061		

HEADQUARTERS

P. O. Box 2451 Chase City, VA 23924 Phone: 434-372-6100/Fax: 434-372-6101

CHASE CITY DISTRICT

P. O. Box 2451 Chase City, VA 23924 Phone: 434-372-6200/Fax: 434-372-6201



Your Touchstone Energy Burger ***** www.meckelec.org SAFETY FIRST!

EMPORIA DISTRICT

P. O. Box 427 Emporia, VA 23847 Phone: 434-634-6168/Fax: 434-348-7100

GRETNA DISTRICT

P. O. Box 617 Gretna, VA 24557 Phone: 434-656-1288/Fax: 434-656-9200

August 21, 2019

Mr. Erik C. Johnston Virginia Department of Housing and Community Development ATTN: Virginia Telecommunications Initiative 600 East Main Street, Suite 300 Richmond, VA 23219

Dear Mr. Johnston,

This letter is to attest to the source of Mecklenburg Electric Cooperative / EMPOWER Broadband's supporting costs for our 2020 Virginia Telecommunications Initiative project areas submitted with Brunswick, Halifax, and Mecklenburg Counties.

The submitted document labeled "Attachment 12 – Documentation of Supporting Costs," provides the totals for each project budget divided into equipment, construction materials, and labor sub-totals.

These budget entries are derived from the detailed analysis of actual costs for our recent build of 50 miles of backbone and including Fiber-To-The-Premise (FTTP) costs for nearly 50 customers. Specifically, actual equipment, material, and labor costs were used as the basis to compose budgets for each project area.

Respectfully submitted,

CCUSE An Jon

Carol Ann Jones Vice President of Finance and Accounting Mecklenburg Electric Cooperative / EMPOWER Broadband

This institution is an equal opportunity provider and employer.

Project Name	Hicks Hill				
EMPOWER /MEC	Consumers	49			
Single Project Cost Template	Take Rate	45.000%			
	Total		KEY IN RED		
EMPOWER	Connects	23	NUMBERS		
DESCRIPTION	LABOR	MATERIAL	QUANTITY	DESCRIPTION	AMOUNT
Outdoor wall mount	\$55.00	\$24.83	23	Connects	\$1,836.09
Splicing (2)	\$61.98	\$0.34	23	Connects	\$1,433.36
Staking	\$45.83		23	Connects	\$1,054.09
ONT (router)	\$350.00	\$253.53	23	Connects	\$13,881.19
E7-2 Package Chassis		\$696.50	0	Each	\$0.00
Battery String Kit, Heater and Connectors		\$7,100.00	0	Each	\$0.00
GPON SFP OIM, Class B+ 1490/1310nm		\$600.00	0	Each	\$0.00
E7-2 8 Card PON unit		\$9,796.50	0	Each	\$0.00
ODC-1000E E7-2 Cabinet Package		\$10,762.50	0	Each	\$0.00
E7-2 Package Chassis		\$696.50	0	Each	\$0.00
GPON SFP OIM, Class B+ 1490/1310nm		\$600.00	0	Each	\$0.00
E7-2 8 Card PON unit		\$9,796.50	0	Each	\$0.00
Total EMPOWER	\$512.81	\$40,327.20			\$18,204.73
				Back Haul to	
				House Feet	
				350	1st Pole Feet
				350	2nd Pole Feet
				350	3rd Pole Feet
				330	4th Pole Feet
Mecklenburg Electric Cooperative	Main Line	1	KEY IN RED	0	Drop
Main Line and Back Haul for EMPOWER	Total Miles	2.14	NUMBERS	1,050.00	
DESCRIPTION	LABOR	MATERIAL	QUANTITY	DESCRIPTION	AMOUNT
Aerial Construction (93% of Total Miles)	\$31,658.90	\$15,491.69	1.990	Miles	\$93,839.10
Underground Construction (7% of Total Miles)	\$26,840.99	\$16,671.21	0.150	Miles	\$6,518.13
Equipment	<i><i><i>q</i>₂₀,010.00</i></i>	\$0.00	0.0	Each	\$0.00
Back Haul and Drop Construction	\$1.49978	\$0.72376	24,150	Feet	\$53,698.49
	\$58,501.39	\$32,163.62	21,150		\$154,055.72
Total Construction	\$50,501.55	<i>Q</i> 02)100102			
Total EMPOWER Projects Cost Estimates as of	1-Jul-19				\$18,204.73
Total MEC Projects Cost Estimates as of	1-Jul-19				\$154,055.72
Total Projects Cost Estimates as of	1-Jul-19				\$172,260.45

EMPOWER Capital Budget Details PROJECT:	T			2.14 1.990 0.150 1,050.00 23.00	Total Main Line M Total Aerial Miles Total Undergroun Back Haul & Drop	d Miles
PROJECT: FTTH Network		SERVICE AREA: EMPOWER		23.00 24,150.00	Total Connects Total Back Haul 8	Drop Feet
NETWORK AND ACCE	SS EQUIPMENT		Unit Cost	Units	Total Costs	
	1	IP Adresses	\$5,500.00			
		Cisco Router - In-house capacity	\$50,000.00			
		E7-2 Package Chassis Battery String Kit, Heater and Connectors	\$696.50 \$7,100.00			
Main Office		Ciena 10GE SFP+ Transceiver 20Km, 1310nm	\$3,096.50			
		GPON SFP OIM. Class B+ 1490/1310nm	\$600.00			
		Ciena Switch	\$10,596.50			
		E7-2 8 Card PON unit	\$9,796.50			
	2	ODC-1000E E7-2 Cabinet Package	\$10,762.50			
	2	E7-2 Package Chassis	\$696.50			
		Battery String Kit, Heater and Connectors 50 / 50	\$2,239.00			
Remote Office/Hubs		Ciena 10GE SFP+ Transceiver 20Km, 1310nm	\$3,096.50			
	24	GPON SFP OIM, Class B+ 1490/1310nm	\$600.00			
	6	Ciena Switch E7-2 8 Card PON unit	\$10,596.50			
	0	Prefab Huts 50/ 50	\$9,796.50 \$14.000.00			
			\$14,000.00	Total	\$0.00	
OUTSIDE PLANT LAB	OR		I	i Uldi	μ φυ.00	
Pre-Construction		Complete Make Ready Construction	\$16,274.48	2.00	\$32,510.34	
		Field Staking of Main Line	\$409.28	2.14	\$875.87	
Aerial	PM99	Transfer/ Relocate Other Comm Facilities	\$0.00	0.00	\$0.00	
	EFBC.12DJ	Install Aerial ADSS Fiber - 12 Count	\$1.00	0.00	\$0.00	
	EFBC.48DJ	Install Aerial ADSS Fiber - 48 Count	\$1.00	0.00	\$0.00	
2 2 2 8	EFBC.144DJ	Install Aerial ADSS Fiber - 144 Count	\$1.05	10,508.26	\$11,033.67	
	EFBDH.144	ADSS DOUBLE HANGER 144 0-15 DEGREES	\$36.00	22.35	\$804.47	
	EFBDDE.144DJ	DOUBLE DEADEND FIBER 144DJ	\$95.00	7.75	\$736.58	
	EFBDE.144DJ	DEADEND FIBER144DJ	\$63.00	0.93	\$58.66	
	EFB.48DJLOOP	FIBER LOOP 150FT 48CT	\$120.00	3.89	\$467.24	
	EFB.144DJLOOP	FIBER 144DJ 150FT LOOP	\$136.00	5.86	\$796.61	
	EF2.12X	ANCHOR POWER INSTALL 10" HELIX	\$98.00	4.77	\$467.85	
	EFBG1.1X	SINGLE DOWN GUY - 6M - With Guy Guard	\$72.00	8.75	\$630.17	
	EFB.48DJLOOP	Maintenance Storage Loop (150') 48CT	\$120.00	2.45	\$294.57	
				2.93		
	FB. 144DJLOOP	Maintenance Storage Loop (150') 144CT	\$136.00	2.93	\$398.31	
Underground	EFB.1RC	Install Conduit - 1.25" Innerduct - Trenched - Min 24" Depth	\$0.00	711.85	\$0.00	
	EFB.1RC	Install Conduit - 1.25" Innerduct - Directional Bored - Min 24" Depth	\$0.00	79.09	\$0.00	
		Install Fiber in Innerduct - 2 Count	\$0.00	0.00	\$0.00	
		Install Fiber in Innerduct - 12 Count	\$0.00	0.00	\$0.00	
		Install Fiber in Innerduct - 48 Count	\$0.00	0.00	\$0.00	
	EFBC.144	Install Fiber in Innerduct - 144 Count	\$2.90	790.94	\$2,293.73	
	EFB.SP	INSTALL FIBER SPLICE PEDESTAL	\$60.00	2.25	\$135.09	
	EFB6.9 (Modified)	FIBER CABLE RISER	\$32.00	13.44	\$430.13	
		Buried Fiber Marker	\$20.00	3.37	\$67.38	
	EFB.VAULT	FIBER VAULT FOR UG CABLE	\$300.00	0.15	\$45.71	
Technicit		Install Splitter Cabinet	\$0.00	0.00	\$0.00	
Technical		Install Splitter	\$0.00	0.00	\$0.00	
	EFSC.12	FIBER SPLICE CAN 12 CT	\$175.00	41.46	\$7,255.36	
	EFSC.48	FIBER SPLICE CAN 48 CT	\$175.00	3.89	\$681.39	
	EFSC.144	FIBER SPLICE CAN 144 CT	\$175.00	5.86	\$1,025.05	
	EFB.144DJDC	DOWNLEAD CUSHION FOR 144 CT	\$32.00	5.86	\$187.44	
	EFB.48DJDC	DOWNLEAD CUSHION FOR 48 CT DOUBLE JACKET (1 Per A Enclosure)	\$32.00	3.89	\$124.60	
		FIBERLIGN DIELECTRIC DAMPERS FOR ADSS CABLE	\$18.00	9.68	\$174.30	
	EFB.1X4SPLITTER	1x4 Symmetrical Splitter Field Installable (5 Splices)	\$30.99	56.88	\$1,762.76	
	EFB.1X8SPLITTER	1x8 Symmetrical Splitter Field Installable (9 Splices)	\$30.99	12.80	\$396.62	
		Splice Fiber with Bidirectional OTDR Test (1310 and 1550 nm Required)	\$30.99	108.89	\$3,374.43	

EMPOWER Capital Budget Detai	ils			0.150 1,050.00	Total Underground Miles Back Haul & Drop Feet
PROJECT: FTTH Network		SERVICE AREA:]	23.00	Total Connects
OUTSIDE PLANT N	MATERIAL S	EMPOWER		24,150.00	Total Back Haul & Drop Fe
Fiber		ADSS 48CT DOUBLE JACKET - HOME	\$0.76250	952.26	\$726.10
		ADSS 144CT DOUBLE JACKET	\$1.38840	12.036.35	\$16,711.27
	Underground	ADSS Single Jacket 144CT	\$0.93920	806.75	\$757.70
	g	WIRE, GUY ALUM-WELD 5/16" 7STR 8M ON 500'	\$0.20790	367.60	\$76.42
		DEADEND, PREFORM GUY 8M ALUMOWELD	\$2.41260	17.50	\$42.23
		CONN., COMP. 8 TO 2/0 ACSR VCSE44 SERVIC	\$1.13010	8.75	\$9.89
		CONN., COMP. VCP 44 6 TO 1/0 ACSR MAIN &	\$1.66490	8.75	\$14.57
Aerial		ATTACHMENT, GUY HOOK	\$3.65500	8.75	\$31.99
		Guy Guards	\$3.02740	8.75	\$26.50
		Washer SQ. Curved 3' X 3' with 11/16 Hole	\$1.08000	8.75	\$9.45
		ANCHOR, SCREW POWER INSTALLED 3/4" EXP	\$37.21680	4.77	\$177.67
		ROD, ANCHOR PISA TYPE 5/8" 7 FT.	\$17.39440	4.77	\$83.04
		ROD, THIMBLE EYE ANCHOR FITTING FOR PISA	\$4.99710	4.77	\$23.86
		BOLT, MACH 5/8 X 18	\$1.83710	22.35	\$41.05
		BOLT, MACH 5/8 X 12	\$1.13130	273.95	\$309.91
		BOLT, MACH 5/8 X 14	\$1.21220	41.46	\$50.26
Hardware		NUT LOCK M.F. TYPE 5/8"	\$0.19800	337.75	\$66.87
		WASHER, SQUARE-FLAT 2-1/4 X 2-1/4	\$0.28000	329.00	\$92.12
		ADSS ALUM.SUPPORT, 144CT Double JCKT	\$30.92060	44.69	\$1,381.92
		ADSS LIM TENSION DE 144CT DOUBLE JCKT	\$39.11300	16.44	\$642.94
		Conduit 1" HDPE SDR 13.5 Orange	\$0.30600	790.94	\$242.03
		Craftsman Fiber Protection Vault w/Lid	\$493.00000	0.15	\$75.11
		FIBER SPLICE PEDESTAL	\$169.70000	2.25	\$382.09
Underground		4"x2" Pedestal Sticker	\$0.70000	2.25	\$1.58
onderground		Riser Guard 2" (57611325) \$8.86 per 10 foot	\$8.86060	13.44	\$119.10
		SCREW LAG 1/4" X 2" W/MET, FLANGE & NEO	\$0.17900	526.63	\$94.27
		Buried Fiber Marker	\$14.60000	3.37	\$49.19
		FIBER SPLICE CAN 12-450 A4 CLOSURE - HOME	\$93.73550	41.46	\$3.886.20
		FIBER SPLICE CAN 48-450 A4 CLOSURE - HOME	\$150.00000	3.89	\$584.05
		FIBER SPLICE CAN 148-450 A4 CLOSORE - HOME	\$244.19850	5.86	\$1,430.38
		A TRAY - HOME	\$12.03680	57.03	\$686.51
		C TRAY	\$12.03080	23.43	\$362.43
Technical		Gel Drop Seal Kit	\$23.64000	45.35	\$1,072.14
recifficat		DOWNLEAD CUSHION FOR ADSS 144CT DBL JCKT	\$7.37110	5.86	\$1,072.14
		DOWNLEAD CUSHION FOR ADSS 144CT DBL JCKT	\$7.37110	3.89	\$43.10
			0111/6.14	5.69	φ20.70
		Pole Mount Kit (.5 per A Enclosure and 1 per C Enclosure)	\$26.15810	28.53	\$746.39
		ERICO CADDY 4" DIA. J HOOK - CAT64HP	\$5.73000	196.11	\$1,123.69
		30" CABLE TIE	\$0.83230	660.05	\$1,123.69
		FIBERLIGN DIELECTRIC DAMPERS FOR ADSS CABLE	\$8.80000	19.37	\$170.43
		1x4 Symmetrical Splitter Field Installable	\$27.68130	11.38	\$314.91
		1x8 Symmetrical Splitter Field Installable	\$32.30550	1.42	\$45.94
		Splice Protector (Fusion Splice Sleeve)	\$0.17000	267.34	\$45.45
			30.17000	207.34 Tot	

EMPOWER Capital Budget Details				0.150 1,050.00	Total Underground Miles Back Haul & Drop Feet
ROJECT:		SERVICE AREA:]	23.00	Total Connects
TTH Network		EMPOWER		24,150.00	Total Back Haul & Drop Fe
DROP TO THE HOME				700.00	\$0.00
Labor		BMUDT [Trench Conduit] BMUDD [Bore Conduit]		782.22 86.92	\$0.00
		Install Fiber Plow In - 12 Count	\$1.45	869.13	\$1,260.24
	05001005	ADSS 12CT DOUBLE JACKET - HOME	\$1.45	18,616.14	\$18,616.14
	95001005		· · · · · · · · · · · · · · · · · · ·	,	. ,
	05004004	Field Staking per Drop	\$117.88	17.27	\$2,035.57
	95001001	MINI LT FLAT DROP CABLE, AT-3BE8T7X-002	\$0.45	5,533.86	\$2,490.24
	EFBDE.12.24.48	Override from C Can Enclosure to Drop take off Pole	\$60.00	17.27	\$1,036.06
	EFBSH.12.24.48	Override in line from C Can Enclosure Pole to Drop			
	LFD311.12.24.40	take off Pole	\$33.00	17.27	\$569.83
	EFBDDE.12.24.48	Drop Take off Pole to A Can Enclosure Pole	\$92.00	17.27	\$1,588.62
	EFBDE.12.24.48 (X)	A Can Enclosure Pole to House Drop	\$60.00	17.27	\$1,036.06
	EFB.12DJLOOP	FIBER LOOP 150FT 12CT	\$118.00	17.27	\$2,037.58
	EFB.DROPLOOP	FIBER DROP 2CT 150FT LOOP	\$118.00	17.27	\$2,037.58
	EFBDE.2.12	DEADEND FIBER 2 & 12CT TO HOUSE	\$57.00	34.54	\$1,968.51
	EFBSH.2.12	ADSS LITE SUPPORT CLAMP 2 & 12CT DROP	\$30.00	0.00	\$0.00
	EFBDDE.2.12	DOUBLE DEADEND 2 & 12CT TO HOUSE	\$30.00	0.00	\$0.00
	EFB.JHOOK	DRIVE JHOOK FLAT DE HOME	\$1.00	17.27	\$17.27
		Wireholder Service Woodscrew with 3" SCR	<u> </u>		
	EFB.2.1		\$22.00	17.27 36.97	\$379.89
		Splicing (3 Splices) ADSS 12CT DOUBLE JACKET - HOME	\$30.99		\$1,145.85
			0.61440	21,578.60	\$13,257.89
		MINI LT FLAT DROP CABLE, AT-3BE8T7X-002	0.11890	8,234.67	\$979.10
		ADSS ALUM SUPPORT 48CT DOUBLE JCKT	28.48360	17.27	\$491.84
Materials		ADSS LIM TENSION DE 48CT DOUBLE JCKT	36.96020	69.07	\$2,552.85
		ADSS DROP CABLE FLAT DEAD END	3.63290	34.54	\$125.46
		Hubbell Drive Hook C2050190	1.03200	17.27	\$17.82
		Wireholder Service Woodscrew with 3" SCR	3.11640	17.27	\$53.81
		Field Staking per Home	\$45.83	23.00	\$1,054.09
	EFB.OWM	OUTDOOR WALL MOUNT Labor	\$55.00	23.00	\$1,265.00
		OUTDOOR WALL MOUNT Materials	\$24.83	23.00	\$571.09
ngoing/Home		Contracted Installation Labor Home	\$350.00	23.00	\$8,050.00
Installation		Calix 844 Series ONT Electronics	\$215.53	23.00	\$4,957.19
		Miscellaneous Materials (w/cable \$38)	\$38.00	23.00	\$874.00
		Splice Protector (Fusion Splice Sleeve)	\$0.17	46.00	\$7.82
		Splicing (2 Splices)	\$30.99	46.00	\$1,425.54
			\$30.99	46.00 Tota	
EQUIPMENT				i Ula	ψι,302.32
		Fusion Splicer	\$20,000.00		
		Computers, iPads	\$500.00		1
Devices		OTDR	\$15,000.00		
		Power Meter	\$1,000.00		
		Light Source	\$2,000.00		
		Pickup Trucks	\$35,000.00		
		Bucket Trucks	\$40,000.00		
Vahialaa		Trailer	\$26,000.00		
Vehicles		Trench Machine Bore Machine	\$75,000.00 \$125,000.00		+
		Wenches, tool boxes, etc.	\$125,000.00		+
		ATV's	\$5,000.00		
		////	\$0,000.00	Tota	I \$0.00

GRAND TOTAL 172,260.15

Office	\$0.00	
Aerial	\$61,328.76	
Make Ready	\$32,510.34	\$93,839.10
Underground	\$6,518.13	
Back Haul & Drop	\$53,698.20	
Ongoing/Home	\$18,204.73	
Equipment	\$0.00	
Total	\$172,260.15	

Attachment 14 - 2020 DHCD VATI Grant Application

Mecklenburg Electric Cooperative / EMPOWER Broadband

18. Additional Information

Any other equitable factor that the applicant desires to include. Applicants are limited to four additional attachments. Label Additional Attachments as:

a. Attachment 14 - Two most recent Form 477 submitted to the FCC or equivalent

On January 30, 2019 EMPOWER Broadband received approval from the Virginia State Corporation Commission (SCC) for the formation of EMPOWER and for the management agreement between EMPOWER Broadband Incorporated and Mecklenburg Electric Cooperative. This was the final regulatory hurdle required for EMPOWER to deliver Fiber-To-The-Premise in addition to ultra high-speed broadband to rural Southside Virginia.

On August 19, 2019 EMPOWER Broadband, INC. and Mecklenburg Electric Cooperative filed their first Form 477 with the Federal Communications Commission (FCC). Accordingly, a copy follows.

DCHD staff has granted permission for Mecklenburg Electric Cooperative to submit two years of its United States Department of Agriculture (USDA), Rural Utilities Service (RUS), Financial and Operating Report, or Form 7, as an equivalent to the FCC Form 477 for this application.

As you review Mecklenburg Electric Cooperative's Form 7, year-end 2017 and 2018, Part A demonstrates our financial strength in providing electric service to those in high cost rural settings while maintaining a well-balanced budget. Part B. represents the number of new services connected and details the extensive electrical infrastructure that MEC has built and maintains to provide reliable service to its members. Additionally, in Part E, you will note Mecklenburg Electric Cooperative's experience in constructing, maintaining and managing \$187 Million in electric distribution plant which serves the most rural and remote areas of Southside Virginia.

Part G tracks electric service interruptions for each calendar year by average minutes out and by cause; these interruption indices are also compared to the five-year average for further evaluation. This information demonstrates Mecklenburg Electric Cooperative's ability to competently review and proactively manage the quality of service it provides to its members.

Mecklenburg Electric Cooperative also has vast experience in serving and maintaining accounts of all sizes. As shown in Part O, MEC services over 29,000 residential accounts and over 1,800 Commercial and Industrial accounts across portions of nine southern Virginia Counties.

In summary, this report validates MEC's ability to maintain and manage a capital-intensive rural utility system, serve a growing and changing customer base, manage and maintain a robust quality of service, and serve 31,000 rural homes, farms, and businesses. Subsequently, MEC has demonstrated the skill, experience, and capability to proficiently build and deliver last mile high speed broadband across its communities.



(RETAIN FOR YOUR RECORDS) Form 477 Filing Summary

FRN: 0027843333 Data as of: Jun 30, 2019 Operations: Non-ILEC Submission Status: Original - Submitted Last Updated: Aug 19, 2019 10:43:38

Filer	Section	Question	Response
Identification	Filer Information	Company Name	EMPOWER Broadband
		Holding Company Name	Mecklenburg Electric Cooperative
		SAC ID	199022
		499 ID	832934
	Data Contact Information	Data Contact Name	Dwayne L Long
		Data Contact Phone Number	(434) 373-6125
		Data Contact E-mail	dlong@meckelec.org
	Emergency Operations Contact Information	Emergency Operations Name	Dwayne L Long
		Emergency Operations Phone Number	(434) 372-6125
		Emergency Operations E-mail	dlong@meckelec.org
	Certifying Official Contact Information	Certifying Official Name	John Lee
		Certifying Official Phone Number	(434) 372-6111
		Certifying Official E-mail	jlee@meckelec.org

Data Submitted	Form Section	File Name	Date & Time	Number of Rows
	Fixed Broadband Deployment	EmpowerBBdeploy63019.csv	Aug 19, 2019 10:37:16	75
	Fixed Broadband Subscription	EMPOWERBBSpeeds063019.csv	Aug 19, 2019 10:38:28	3

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Virginia	EMPOWER Broadband	Optical Carrier/Fiber to the End User	75
Total			75

Fixed	
Broadband	
Subscriptior	۱

Fixed Broadband Subscriptions by State, Technology and End-user Type

n					Subscriptions	
	State	Technology	Census Tracts	Consumer	Business / Govt	Total

				Subscriptions	
State	Technology	Census Tracts	Consumer	Business / Govt	Total
Virginia	Optical Carrier/Fiber to the End User	3	23	2	25
Total		3	23	2	25

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
50.000	50.000	22	2	24
100.000	100.000	1	0	1
Total		23	2	25

Fixed Broadband Subscriptions by Technology, Bandwidths and End-user Type

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Optical Carrier/Fiber to the End User	50.000	50.000	22	2	24
0361	100.000	100.000	1	0	1
Total			23	2	25

According to the Paperwork Reduction Act of 1995, an agency may not conduct or spor							
control number, The valid OMB control number for this information collection is 0572- response, including the time for reviewing instructions, searching existing data sources,	4		U				
UNITED STATES DEPARTMENT OF AGRICULTURE	BORROWER DESI		and reviewing the contection	ni or information.			
RURAL UTILITIES SERVICE	BORROWER DESI	VA0031					
FINANCIAL AND OPERATING REPORT	PERIOD ENDED D	PERIOD ENDED December, 2017					
ELECTRIC DISTRIBUTION	BORROWER NAM	IF					
INSTRUCTIONS - See help in the online application.	BORROWERTHAN	Mecklenburg El	ectric Cooperati	ve			
This information is analyzed and used to determine the submitter's financial si			are required by contrac	t and applicable			
regulations to provide the information. The information provided is subject to		Act (5 U.S.C. 552)					
	CERTIFICATION						
We recognize that statements contained herein concern a mat false, fictitious or fraudulent statement may render the ma							
We hereby certify that the entries in this re of the system and reflect the status of							
ALL INSURANCE REQUIRED BY PART 1788 OF 7 C PERIOD AND RENEWALS HAVE BEEN OBT BY THIS REPORT PURSUANT (ch	AINED FOR ALL POLIC	IES DURING THE PE		ING			
All of the obligations under the RUS loan documents have been fulfilled in all material respects.		re has been a default in th ler the RUS loan docume cifically described in Par	nts. Said default(s) is/ar				
PART A. ST	TATEMENT OF OPERAT	TIONS					
		YEAR-TO-DATE					
ITEM	LAST YEAR	THIS YEAR	BUDGET	THIS MONTH			
1. Operating Revenue and Patronage Capital	67,886,914	(b) 63,990,391	(c) 64,618,515	(<i>d</i>) 6,251,864			
2. Power Production Expense	0	0	0	0			
3. Cost of Purchased Power	43,594,110	38,382,977	39,408,258	2,804,575			
4. Transmission Expense	11,177	12,975	13,319	885			
5. Regional Market Expense	0	0	0	0			
6. Distribution Expense - Operation	3,479,151	3,485,010	3,556,261	253,238			
7. Distribution Expense - Maintenance	4,454,980	4,650,791	4,603,456	754,607			
8. Customer Accounts Expense	1,818,875	1,784,665	1,829,911	156,779			
9. Customer Service and Informational Expense	243,404	235,990	236,554	16,633			
10. Sales Expense	0	0	0	0			
11. Administrative and General Expense	4,138,931	4,364,646	4,363,951	453,497			
12. Total Operation & Maintenance Expense (2 thru 11)	57,740,628	52,917,054	54,011,710	4,440,214			
13. Depreciation and Amortization Expense	5,574,872	5,736,150	5,745,653	483,489			
14. Tax Expense - Property & Gross Receipts	0	0	0	0			
15. Tax Expense - Other	855	259	0	0			
16. Interest on Long-Term Debt	3,835,069	3,680,893	3,838,848	233,504			
17. Interest Charged to Construction - Credit	0	0	0	233,304			
18. Interest Expense - Other	6,272	38,091	6,313	5,972			
19. Other Deductions	82,785	68,774	35,800	10,700			
20. Total Cost of Electric Service (12 thru 19)	67,240,481	62,441,221	63,638,324	5,173,879			
 Patronage Capital & Operating Margins (1 minus 20) 	646,433	1,549,170	980,191	1,077,985			
22. Non Operating Margins - Interest	219,601	237,956	180,334	4,982			
23. Allowance for Funds Used During Construction	0	0	0	1, 502			
24 Income (Loss) from Equity Investments	(520)	(545)	0	(545)			
25. Non Operating Margins - Other	22,030	31,015	6,243	30,368			
26. Generation and Transmission Capital Credits	855,655	1,300,964	618,841	1,306,065			
27. Other Capital Credits and Patronage Dividends	188,648	192,832	159,350	25,900			
27. Other Capital Credits and Patronage Dividends 28. Extraordinary Items	188,848	152,852	159,350	0,000			
 23. Extraordinary terms 29. Patronage Capital or Margins (21 thru 28) 		3,311,392		2 444 755			
47. FAU UNARE CADITAL OF MARGINS (21 INFU 28)	1,931,847	5,511,592	1,944,959	2,444,755			

Revision Date 2014

		ES DEPARTMENT OF AGRI	CULTUR	E	BOI	RROWER DESIGNATION		
		RAL UTILITIES SERVICE	FPORT			VA0031		
		CTRIC DISTRIBUTION			PERIOD ENDED			
INIST	RUCTIONS - See help in th					December, 201	7	
11451			D. D. (T.					
_		YEAR-			ON A	ND DISTRIBUTION PLANT	YEAR-TO	DATE
	ITEM	LAST YEAR		HIS YEAR		ITEM	LAST YEAR	THIS YEAR
	TT DAT	(<i>a</i>)		(b)			(1)	(b)
1. N	lew Services Connected	279	_	262	5. N	Miles Transmission	18.41	18.
2. S	ervices Retired	153		165		Miles Distribution – Dverhead	4,217.11	4,208.
3. T	otal Services in Place	33,995		34,096		Miles Distribution - Underground	234.85	246.
4. Ic	lle Services	2 670		0.541	8.	Total Miles Energized		4 482
(Exclude Seasonals)	2,670		2,761		(5 + 6 + 7)	4,470.37	4,473.
				PART C. BAL	ANCI	E SHEET		
_		IS AND OTHER DEBIT	`S				ND OTHER CREDITS	
1.	Total Utility Plant in Servi		_	182,636,985	30.	Memberships		
2.	Construction Work in Prog			4,536,209	31.	Patronage Capital		55,261,0
3.	Total Utility Plant (1 +			187,173,194	32.	Operating Margins - Prior Years		
1	Accum. Provision for Dep			60,378,607	33,	Operating Margins - Current Yea	аг	2,850,
5.	Net Utility Plant (3 - 4)			126,794,587	34.	Non-Operating Margins		8,191,
5.	Non-Utility Property (Net)			0	35.	Other Margins and Equities		2,501,5
7.	Investments in Subsidiary		_	7,664	36.	Total Margins & Equities (3)	0 thru 35)	68,805,0
8.	Invest. in Assoc. Org - Pa		-	27,818,649	37.	Long-Term Debt - RUS (Net)		5,594,6
9.	Invest. in Assoc. Org Ot		_	0	38	Long-Term Debt - FFB - RUS G		62,610,
10.	Invest. in Assoc. Org Ot			1,811,325 120,545	39.	Long-Term Debt - Other - RUS	Guaranteed	23,840,3
11.	Investments in Economic Other Investments	Development Projects	_	1,915	40.	Long-Term Debt Other (Net)	David (Nat)	120,5
12.	Special Funds			908,178	41.	Payments - Unapplied	Devel. (Not)	809,1
14.	Total Other Property & (6 thru 13)	k Investments		30,668,276	43.	Total Long-Term Debt (37 thru 41 - 42)		91,356,
15.	Cash - General Funds			2,116,759	44.	Obligations Under Capital Lease	s - Noncurrent	
16.	Cash - Construction Funds	s - Trustee		100	45,	Accumulated Operating Provisio and Asset Retirement Obligation	ons	1,253,2
17.	Special Deposits			0	46.	Total Other Noncurrent Lia	bilities (44 + 45)	1,253,2
18.	Temporary Investments			1,676,984	47.	Notes Payable		
19.	Notes Receivable (Net)			47,232	48.	Accounts Payable		5,616,6
20.	Accounts Receivable - Sal	cs of Energy (Net)		4,912,346	49.	Consumers Deposits		1,986,
21.	Accounts Receivable - Oth			2,141,426	47.			
22.	Renewable Energy Credits			1,250	50.	Current Maturities Long-Term D		6,757,3
23.	Materials and Supplies - E	lectric & Other		1,638,703	51.	Current Maturities Long-Term D - Economic Development		47,2
24.	Prepayments		_	151,192	52.	Current Maturities Capital Lease		
25.	Other Current and Accrue		_	4,388,344	53.	Other Current and Accrued Liab		1,868,9
26.	Total Current and Acc (15 thru 25)	rued Assets		17,074,336	54.	Total Current & Accrued Lia (47 thru 53)	abilities	16,276,0
27.	Regulatory Assets		_	0	55.	Regulatory Liabilities		
28.	Other Deferred Debits			3,170,679	56.	Other Deferred Credits		16,7
29.	Total Assets and Other (5+14+26 thru 28)	Debits		177,707,878	57.	Total Liabilities and Other C (36 + 43 + 46 + 54 thru 56)	Credits	177,707,8

MECKLENBURG ELECTRIC COOPERATIVE CASH FLOW REPORT FOR THE MONTH ENDING DECEMBER 2017

PAGE 3

TOTAL CASH GENERAL FUNDS (RUS Form 7-Part C, L-15,16 &18) as of	11/30/17	5,156,256
ADDITIONS:		
Deposits-General Deposits-Emporia	4,900,776 174,223	
Deposits-Gretna Interest Earned on Investments Interest Earned on Checking Accounts	244,634 15,508 9	
TOTAL ADDITIONS TOTAL CASH AVAILABLE		<u>5,335,150</u> 10,491,406
EXPENDITURES:		
Routine	894,427	
Wholesale Power Bills - ODEC and SEPA	3,279,734	
Anthem Bluecross Blueshield NRECA	111,216	
Payroll and Payroll Taxes	106,451 646,127	
Customer Refunds	28,336	
VMD	25,726	
Inventory	72,642	
Asplundh Tree Expert - (tree trimming)	202,959	
Alliance Forestry	10,712	
Patterson & Dewar Engineers - (Hickory Grove and Island Creek)	25,337	
Lee Electrical - (Island Creek) Federated Rural Electric Insurance Exchange	103,756	
Fire and Rescue Squad donations	66,740 10,700	
Carter Baldwin - (consulting services)	18,333	
Vantage Point Solutions - (grant application project)	5,300	
LeClair Ryan - (consulting services)	35,409	
Capital Credit - (general retirement)	1,053,659	
TOTAL EXPENDITURES		6,697,564
TOTAL CASH GENERAL FUNDS (RUS Form 7-Part C, L-15,16 &18) as of	12/31/17	3,793,843
SPECIAL FUNDS (RUS Form 7, Part C, Line 12 & 13)		910,093
TOTAL CASH GENERAL FUNDS AND SPECIAL FUNDS		4,703,936

Note: Long term debt payment to RUS in the amount of \$42,539.49 and FFB in the amount of \$ 1,068,830.61 were deducted from RUS Cushion of Credit Account on December 31, 2017.

UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE	BORROWER DESIGNATION					
FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION	VA0031					
INSTRUCTIONS - See help in the online application.	PERIOD ENDED December, 2017					
PART D. NOTES TO FIN	VANCIAL STATEMENTS					
1. Part C, line 28, Other Deferred Debits, consists o	f the following:					
a. Preliminary Investigation Charges for the Work P	a. Preliminary Investigation Charges for the Work Plan - \$131,119					
b. Retirement Security Pension Plan Prepayment - \$2,837,808						
c. Deferred Fuel - \$201,752						
2. Part C, line 25, Other Current & Accrued Assets includes unbilled revenue in the amount of \$ 4,169,356						
3. Part C, line 56, Other Deferred Credits, consists of the following:						
a. Sales Tax Surcharge - \$16,771						

UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION	BORROWER DESIGNATION VA0031
INSTRUCTIONS - See help in the online application.	PERIOD ENDED December, 2017
PART D. CERTIFICATIO	N LOAN DEFAULT NOTES

UN		DEPARTMEN LUTILITIES	T OF AGRICULTU	JRE	BORROV	WER DESIG	NATION	VA0031		
FI			ATING REPORI	DRT	PERIOD		ecember	, 2017		
INSTRUCTIONS - See h	elp in the onlin	e applicatior								
		_		ART F. CHANGE	ES IN UTILITY P	LANT		ADJUSTMENTS	AND	BALANCE
PLAN	NT ITEM		BEGINNIN	NG OF YEAR (a)	ADDITIONS (b)	RETIREN (c)		TRANSFER: (d)		END OF YEAR (e)
1. Distribution Plant			1	151,491,031	5,615,910	1,4	68,931			155,638,01
2. General Plant				16,606,162	650,057	7	26,245		_	16,529,97
8. Headquarters Plant				5,347,354	12,794		2,535			5,357,61
Intangibles				1,119,641						1,119,64
. Transmission Plant				3,595,842	55,253		43,425			3,607,67
 Regional Transmissio Operation Plant 	n and Market			0						
7. All Other Utility Plan	t			388,877			4,800	· · · · · · · · · · · · · · · · · · ·		384,07
8. Total Utility Plant	in Service (1 t	thru 7)		178,548,907	6,334,014	2,2	45,936		ĺ	182,636,98
. Construction Work in	Progress			2,300,567	2,235,642	12 No of 10		- 18 M 12 M 1		4,536,20
10. Total Utility Plant	(8 + 9)		İ	180,849,474	8,569,656	2,2	45,936			187,173,19
			P.	ART F. MATER	IALS AND SUPP	LIES				
ITEM	BALAN BEGINNING (a)	OF YEAR	PURCHASED (b)	SALVAGED	USED (NE'	T) S	OLD (e)	ADJUSTMEN (/)	т	BALANCE END OF YEAR (g)
Electric		770,495	1,833,065	165,7		211	<u>(e)</u>		517	1,638,70
Other		6,613	1,000,000			613				
		0,010	Р	ART G. SERVIO	CE INTERRUPTI				_	
					ER CONSUMER					
ITEM	POWI	ER SUPPLI (a)		OR EVENT (b)	PLANN (c)			LL OTHER (d)		TOTAL (e)
. Present Year		11.5	530	28.350		4.710		149.770		194.360
. Five-Year Average		2.8	370	117.150		7.690		186.090		313.800
			PART H. EN		R AND PAYROL	LL STATIST	TICS			
. Number of Full Time	Employees			98	4. Payroll - Exp	ensed				5,472,566
Employee - Hours Wo	orked - Regular	r Time		214,713						2,992,491
Employee - Hours Wo	orked - Overtin	ne		14,896						88,277
				PART I. PATR	ONAGE CAPITA	AL				
ITEM			\bigcirc	DESCRIPTIO	N		TI	HIS YEAR (a)	(CUMULATIVE (b)
Capital Credits - Distri	butions	P	al Retirements				-	1,011,550		33,689,417
		-	al Retirements				-	81,920		4,114,779
			al Retirements (1,093,470		37,804,196
. Capital Credits - Receiv	ved	Suppl	iers of Electric Po					363,001		
		Lende	ers for Credit Exte	tirement of Patror ended to the Electr	0 1 2			50,946		
		c. Tot	al Cash Received	· ·				413,947	a n dh	
			PART J. DUE		MERS FOR ELE					
Amount Due Over 60 I	Days	\$	ENERGY EFFI	9,202 CIENCY AND C	2. Amount Wri				\$	124,542
Anticipated Loan Deline	Juency %				4. Anticipated I					
Actual Loan Delinguend					5. Actual Loan					
4	Dollars YTD						s YTD			

Revision Date 2014

		RURAL UTIL	IMENT OF AGRICU ITIES SERVICE PERATING REP(ISTRIBUTION		BORROWE	ER DESIGNATIO	ON VA0031		
INSTRUCTIONS - See help in the online application PERIOD ENDED December, 2017									
[РА	RT K. kWb PUR	CHASED AND T	OTAL COST			
No	ITEM	SUPPLIER CODE	RENEWABLE ENERGY PROGRAM NAME	RENEWABLE FUEL TYPE	kWh PURCHASED	TOTAL COST	AVERAGE COST (Cents/kWb)	INCLUDED IN TOTAL COST - FUEL COST ADJUSTMENT	WHEELING
	<u>(a)</u>	(b)	<u>(c)</u>	<u>(d)</u>	<u>(e)</u>	<u>(f)</u>	(g)	<u>(h)</u>	<u>(i)</u>
1	Old Dominion Electric Coop	40229			607,957,350	36,717,927	6.04	(170,201)	25,783
2	Southeastern Power Admin	29304			22,992,007	1,664,520	7.24		770,381
3	*Miscellaneous	700000	GREENCO	Solar - photvoltaic		530	0.00		
	Total				630,949,357	38,382,977	6.08	(170,201)	796,164

	UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION	BORROWER DESIGNATION VA0031
INSTRU	CTIONS - See help in the online application	PERIOD ENDED December, 2017
	PART K. kWb PURCHA	SED AND TOTAL COST
No		Comments
1		
2		
3	Renewable Energy Credits	

UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE		BORROWER DESIGNATION	
	FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION	VA0031	
INSTF	RUCTIONS - See help in the online application.	PERIOD ENDED December, 2017	
	PART L	. LONG-TERM LEASES	
No NAME OF LESSOR (a)		TYPE OF PROPERTY (b)	RENTAL THIS YEAR (c)
	TOTAL		

	TMENT OF AGRICULTURE ITIES SERVICE	BORROWER DESIGNATION			
	DPERATING REPORT DISTRIBUTION	PERIOD ENDED December, 2017			
INSTRUCTIONS - See help in the online app	plication.				
	PART M. ANNUAL MEETIN	G A	ND BOARD DATA		
1. Date of Last Annual Meeting	2. Total Number of Members	3.1	Number of Members Present at Meeting	4. Was Quorum Present?	
6/21/2017	31,165		451	Y	
5. Number of Members Voting by Proxy or Mail			Total Amount of Fees and Expenses for Board Members	8. Does Manager Have Written Contract?	
3,200	11	5	\$ 137,415	У	

Revision Date 2014

INSTE	UNITED STATES DEPARTMENT OF A RURAL UTILITIES SERVIC FINANCIAL AND OPERATING F ELECTRIC DISTRIBUTIO RUCTIONS - See help in the online application.	CE REPORT N	BORROWER DESIGNATION PERIOD ENDED Decembe	VA0031 r, 2017	
No	PART N. J ITEM	LONG-TERM DEBT AND BALANCE END OF YEAR (a)	DEBT SERVICE REQUIR INTEREST (Billed This Year) (b)	REMENTS PRINCIPAL (Billed This Year) (c)	TOTAL (Billed This Year) (d)
1	Rural Utilities Service (Excludes RUS - Economic Development Loans)	5,594,670	111,363	397,900	509,263
2	National Rural Utilities Cooperative Finance Corporation	22,237,528	1,049,201	1,817,263	2,866,464
3	CoBank, ACB				
4	Federal Financing Bank	62,610,952	2,459,034	1,816,819	4,275,853
5	RUS - Economic Development Loans	120,545		76,862	76,862
6	Payments Unapplied	809,801			
7	Principal Payments Received from Ultimate Recipients of IRP Loans				
	Principal Payments Received from Ultimate Recipients of REDL Loans				
9	Principal Payments Received from Ultimate Recipients of EE Loans				
10	Farmer Mac	1,602.817	103.239	223,930	327,169
	TOTAL	91,356,711	3,722,837	4,332,774	8,055,611

UNITED STATES DEPARTM RURAL UTILITI		BORROWER DESIGNATIO	ON VA0031	
FINANCIAL AND OP ELECTRIC DIS		PERIOD ENDED	er, 2017	
INSTRUCTIONS - See help in the online				
	PART O. POWER REQUIREN	MENTS DATABASE - ANNUA		TOT 1
CLASSIFICATION	CONSUMER SALES & REVENUE DATA	DECEMBER (a)	AVERAGE NO. CONSUMERS SERVED (b)	TOTAL YEAR TO DATE (c)
1. Residential Sales (excluding	a, No. Consumers Served	29,449	29,437	
seasonal)	b. kWh Sold			346,673,663
	c. Revenue		-80% (A) 1 (2 (5 A) 3)	44,162,05
2. Residential Sales - Seasonal	a. No. Consumers Served	0	0	
	b, kWh Sold	Contraction of the last		(
	c. Revenue		영구도 김 태대학교 관계권	
3. Irrigation Sales	a. No. Consumers Served	0	0	
	b. kWh Sold			
	c, Revenue			
4. Comm, and Ind, 1000 KVA or Less	a. No. Consumers Served	1,516	1,517	
	b. kWh Sold			64,995,560
	c, Revenue			6,540,392
5. Comm. and Ind. Over 1000 KVA	a. No. Consumers Served	24	23	
	b. kWh Sold		C3	153,147,62
	c. Revenue			9,681,15
6. Public Street & Highway Lighting	a. No. Consumers Served	0	0	
	b kWh Sold			
	c. Revenue			(
7. Other Sales to Public Authorities	a. No. Consumers Served	346	345	
	b_ kWh Sold	FIRE STREET	and the second	32,636,343
	c. Revenue			2,911,354
8. Sales for Resale - RUS Borrowers	a. No. Consumers Served	0	0	
	b. kWh Sold	CARLE MARCHER		
	c. Revenue			(
9. Sales for Resale - Other	a. No. Consumers Served	0	0	a the second second second
	b. kWh Sold	The second second second second	이 아이에 나는 것 않으는	(
	c, Revenue	이 의 모르고 있었		(
10. Total No. of Consumers (<i>lines</i> 1	a th ru 9 a)	31,335	31,322	
11. Total kWh Sold (lines 1b thru 9				597,453,190
12. Total Revenue Received From S Electric Energy (lines 1c thru 9)				63,294,960
13 Transmission Revenue				
14. Other Electric Revenue				695,433
15. kWh - Own Use				824,830
 Total kWh Purchased Total kWh Generated 				630,949,35
18. Cost of Purchases and Generation				38,395,95
19. Interchange - kWh - Net				
20. Peak - Sum All kW Input (Metered)			
Non-coincident Coincident	·	<u>, sa at</u> 1985 k		165,684

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Revision Date 2014

UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE			BORROWER DESIGNATION VA0031				
FINANCIAL AND OPERAT							
ELECTRIC DISTRIB			PERIOD ENDED	December, 201	17		
INSTRUCTIONS - See help in the online application.		ENERCY FEEICI	CIENCY PROGRAMS				
	I	ADDED THIS YI			TOTAL TO DAT	ГЕ	
CLASSIFICATION	No. of Consumers (a)	Amount Invested <i>(b)</i>	Estimated MMBTU Savings (c)	No. of Consumers (d)	Amount Invested	Estimated MMBTU Savings (f)	
1. Residential Sales (excluding seasonal)							
2. Residential Sales - Seasonal							
3. Irrigation Sales							
4. Comm. and Ind. 1000 KVA or Less	1						
5. Comm. and Ind. Over 1000 KVA	i l			i i		ĺ	
6. Public Street and Highway Lighting	i i		i				
7. Other Sales to Public Authorities							
8. Sales for Resale – RUS Borrowers	i i			i i			
9. Sales for Resale – Other	i i			1			
10. Total	İ l						

UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE

FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION INVESTMENTS, LOAN GUARANTEES AND LOANS

INSTRUCTIONS - Reporting of investments is required by 7 CFR 1717, Subpart N. Investment categories reported on this Part correspond to Balance Sheet items in Part C. Identify all investments in Rural Development with an 'X' in column (e). Both 'Included' and 'Excluded' Investments must be reported. See help in the online application.

No	DESCRIPTION	VESTMENTS (See Instruc INCLUDED	EXCLUDED	INCOME OR LOSS	RURAL
0110	(a)	(\$) (b)	(\$) (c)	(\$) (d)	DEVELOPMENT (e)
2	Investments in Associated Organizations		(0)	70/	(0)
_	NRUCFC Capital Term		1,426,905	64,007	
	ODEC Patronage Capital		26.735.322	1,300,964	
	VMD Association of Electric Cooperatives	33,920	20,755,522	1,500,501	
	NRUCFC Membership Certificates	551520	1,000		
_	NRTC Membership Certificates	1,000	1,000		
Í	United Utility Supply Patronage Capital	35,882	i		
	Electrical Research & Mfg Cooperative	55,808		10,370	
	Tarheel Electric Membership Association, Inc.	38,291		19,000	
1	NRUCFC Patronage Capital		615,372	101,892	
	National Rural Telecommunications Cooperative	19,072		101(0)1	
ī	Touchstone Energy Cooperative	487		İ	
	TEC Trading, Inc.	347,500			
_	Federated Rural Electric Insurance Exchange	268,925		37,372	
1	Mecklenburg Communications Services, Inc.	7,665		(545)	
	Arkansas Electric Cooperative, Inc.	3,354		(545)	
1	Co-Bank	5,50	1,000		
	National Information Solutions Cooperative	45.093	1,000	24,197	
1	GRESCO Utility Supply, Inc.	100			
T	Buggs Island Telephone Cooperative	942			
	Totals	858,039	28,779,599	1,557,257	
_	Investments in Economic Development Projects			1,001,201	
	Economic Development Project-Oran Safety Glass	69,635		1	x
<u> </u>	Economic Development Project-Good Earth Peanut Co.	50,910		i	x
1	Totals	120,545			
	Other Investments	1201010			1
-1	Contracts	907			
t	Charter Communications	1,008			
1	Totals	1,915			
- 1	Special Funds	1,715			
- 1	NRECA Deferred Compensation	720,558			
1	NRECA Deferred Compensation-Directors	187,620			
T	Totals	908,178			(
6	Cash - General	200,110			
	Checking Accounts	1	2,116,759		
	Totals		2,116,759		
- 1	Temporary Investments		2,110,137		
- 1	Member Prepayment-Old Dominin Electric	1,676,984			
- 1	Totals	1,676,984			
	Accounts and Notes Receivable - NET	1.070,701			
- 1	Accounts Receivable-Other	117,492			
- 1	Notes Receivable-Oran Safety Glass	19,452			x
1	Notes Receivable-Good Earth Peanut Co.	27,780			X
1	Accounts Receivable - ODEC	2,023,934			
1	Totals	2,188,658		1	
- i	TOTAL INVESTMENTS (1 thru 10)	5,754,319	30,896,358	1,557.257	

PERIOD ENDED

December, 2017

	UNITED STATES DEPARTMENT OF A RURAL UTILITIES SERVI		CULTURE BORROWER DESIGNAT			
	FINANCIAL AND OPERATING ELECTRIC DISTRIBUTI INVESTMENTS, LOAN GUARANTEI	ON	PERIOD ENDED December	r, 2017		
INST C. Id	entify all investments in Rural Development with	orting of investments is required by 7 CFR 1717. Subpart 1		N_* Investment categories reported on this Part correspond to Balance Sheet Included' and 'Excluded' Investments must be reported. See help in the online		
appli	cation					
appli	cation.	PART Q. SECTION II.	LOAN GUARANTEES			
applio No	ORGANIZATION	MATURITY DATE	LOAN GUARANTEES ORIGINAL AMOUNT (\$) (\$)	LOAN BALANCE (\$) (d)	RURAL DEVELOPMENT	
			1	LOAN BALANCE (\$) (d)	RURAL	

		SECTION	IV. LOANS				
	INVESTMENTS AND LOAN GUARANT cluded Investments (Section I, 11b) and Lo port]		ee (Section II, 5d) to Total Utili	ty Plant (Line 3, Part	3.07 9		
		SECTION	III. RATIO				
INSTRUCTI C. Identify a application.	IONS - Reporting of investments is require Il investments in Rural Development with a	d by 7 CFR 1717, Subpart N an 'X' in column (e). Both 'In	. Investment categories reported cluded' and 'Excluded' Investme	d on this Part correspond to B ents must be reported. See he	alance Sheet items in Par lp in the online		
	FINANCIAL AND OPERATING ELECTRIC DISTRIBUTIO INVESTMENTS, LOAN GUARANTEE	ON	PERIOD ENDED December, 2017				
UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE BORROWER DESIGNATION VA0031							

No	ORGANIZATION (a)	MATURITY DATE (b)	ORIGINAL AMOUNT (\$) (c)	LOAN BALANCE (\$) (d)	RURAL DEVELOPMENT (e)
1	Employees, Officers, Directors	12/31/2018	1,232	1,232	
2	Energy Resources Conservation Loans				
	TOTAL		1,232	1.232	

	USDA-REA				BORROWER I Mecklenburg		rative		
	FINANCIAL AND STATISTICAL RE	POR	т		PERIOD ENDI December 201	NG		REA	USE ONLY
NSTRUCTIONS-See REA									
	PART R	. PO		EMENTS DATA	BASE				
CLASSIFICATION	SALES	1	JANUARY	FEBRUARY	MARCH	APRIL	MAY	1	JUNE
	REVENUE DATA		(a)	(b)	(c)	(d)	(e)		(f)
Desidential Onlar	a. No. Consumers Served	-	29,429	29,408	29.418	29,422	29,440	-	29,43
. Residential Sales (excluding seasonal)	b. KWH Sold c. Revenue	15	36,684,988 4,414,793	33.873.560 \$ 4,136,493	21,206,973	21,195,790 \$ 2,900,394	22,488,221 \$ 3,083,645		27,678,92 3,538,44
(excluding seasonal)	a. No. Consumers Served	- -*	4,414,795	4,130,493	\$ 2,920,243	\$ 2,500,354	\$ 3,083,045	1.0	3,000,44
2. Residential Sales -	b. KWH Sold							1	
Seasonal	c. Revenue								_
Irrigation Sales	a. No. Consumers Served b. KWH Sold	-				-		-	_
	c. Revenue	-						†	
	a. No. Consumers Served		1,508	1.511	1,513	1,517	1,519	Ì	1,52
. Comm. and Ind.	b. KWH Sold		4,986,617	4,804,069	4,016,633	4,490,034	4,844,561	1	5.599,33
1000 KVA or Less	c. Revenue	\$	511.314					\$	557,52
	a. No. Consumers Served		23	23	23	23	23		2
5. Comm. and Ind.	b. KWH Sold	-	12,794,010	12,963,971	11,340.474	10,921.816	13,188,778		12,866,47
Over 1000 KVA	c. Revenue	\$	795,761	\$ 816,617	\$ 695.903	\$ 714,210	\$ 839,166	1\$	806,94
	a. No. Consumers Served	-						-	_
 Public Street & Highway Lighting 	b. KWH Sold c. Revenue	-						-	-
Lighting	a. No. Consumers Served	-	344	344	344	345	345	+	34
7. Other Sales to Public	b. KWH Sold	-	2,805,328	2,775,531	2,267,925	2,404,794	2,630,969	1	2,804,45
Authority	c. Revenue	\$	257.181					İ\$	244,142
,	a. No. Consumers Served	Ť						I	
 Sales for Resales-REA Borrowers 	b. KWH Sold							1	
	c. Revenue							1	
9. Sales for Resales-Other	a. No. Consumers Served							1	_
	b. KWH Sold c. Revenue							-	_
0. TOTAL No. of Consum	·		31,304	31,286	31,298	31,307	31,327	ſ	31,32
1. TOTAL KWH Sold (line	is 1b thru 9b)		57,270,943	54,417,131	38,832,005	39,012,434	43,152,529		48,949,18
2. TOTAL Revenue Recei 'Electric Energy (line 1		\$	5,979,049	\$ 5,695,122	\$ 4,270,932	\$ 4,305,911	\$ 4,671,416	\$	5,147,06
3. Other Electric Revenue		\$	60,938	\$ 59,748	\$ 61,443	\$ 56,605	\$ 55,931	\$	52,89
4. KWH - Own Use			95,999	60,986	65,978	58,258	50,565		72,36
5. TOTAL KWH Purchase	d		60,181,661	46,533,581	51,458,408	41,146,831	45,442,920		51,336,06
6. TOTAL KWH Generate	d								
7. Cost of Purchases and	Generation	\$	3,859,314	\$ 3,086,959	\$ 3,147,305	\$ 2,776,976	\$ 2,937,039	\$	3,204,49
8. Interchange - KWH - No									
9. Peak - Sum All KW Inp	ut (Metered) -Coincident		165,684 170,029	115,736 124,675	127,471 136,491	91,684 99,435	93,228 108,923		105,49 120,19

		Mecklenburg PERIOD ENDI December 201	NG				RE/	A USE ONLY]					
	9		_	PAR	ſR.	POWERR	EQI		DA	TA BASE			_	
	1_		7	-					_			FORMER		TOTAL
		JULY		AUGUST	S	EPTEMBER	OCTOBER		NOVEMBER		DECEMBER		<u> </u>	TOTAL
_		<u>(g)</u>	-	(h)		(i)		(j)	⊢	(k) 29,460	_	<u>(I)</u>	(Co	lumns a th
	b	29,436 36,766,515		29,457 31,763,011		29,433 24,670,369	-	29,454 23,467,618		29,460	1	29,449 37,775,062		346,673,
1	c	\$ 4,516,892			\$		\$	3,137,355	\$		\$	4,579,287	\$	44,162,
	а										_			
2	b		-										\$	
2	a										1			
	b				-				Ì.					
3	С											4 540	\$	
	a b	1,523 6,565,369		1,522 6,995,810	_	1,517 6,383,235	-	1,517 5,953,494	<u> </u>	1,517 4,879,914		1,516		64,995,
4	c	\$ 642,509			\$	616,936	\$	577,402	\$	507,510	\$	543,710	\$	6,540,3
	а	22	1	23		23		23		23		24		
-	b	13,114,959		13,583,470		12,673,293		13,614,193		13,008,650		13.077,537		153,147,0
5	c a	\$ 805,368	\$	886,419	\$	791,180	\$	868,289	\$	827,773	Э	833,522	\$	9,681,1
	b										1			
6	С												\$	
	a	345		345		346		346		347	_	346		20.020
7	b	3,148,055 \$ 269,741		3,078,425 270,070	\$	2,745,262 243,509	\$	2,646,800 237,640	\$	2.676,873 238,608	\$	2.651,930 238,417	\$	32,636,3 2,911,3
	a	¥ 200,741	+*	210,010	T.	240,000	F	201,040	Ť	200,000	Ŵ	200,417	•	2,011,0
	b													
8	C		-										\$	
	a b		+		-				<u> </u>				<u> </u>	
9	c								1]			\$	
10		31,326		31,347		31,319		31,340		31,347		31,335		
11		59,594,898		55,420,716		46,472,159		45,682,105		49,668,066		58,981,021		597,453,
12		\$ 6,234,510	\$	5,794,959	\$	4,904,307	\$	4,820,685	\$	5,276,072	\$	6,194,936	\$	63,294,
13		\$ 54,900	\$	56,264	\$	57,814	\$	61,170	\$	60,796	\$	56,928	\$	695,4
14		78,646		79,492		67,071		62,716		62,021		70,737		824,
15		62,736,205		58,089,753		48,500,952		48,216,276		52,614,015		64,692,686		630,949,:
16														
17		\$ 3,668,867	\$	3,565,130	\$	3,075,027	\$	3,011,671	\$	3,245,617	\$	2,804,575	\$	38,382,
18														
19	-	114,510	-	125,013	-	101,151	_	91,146	-	106,008	-	139,739		165,
	1	137,185		134,119	1	113,791	1	105,283	1	,	1			170,

According to the Paperwork Reduction Act of 1995, an agency may not conduct or spor control number. The valid OMB control number for this information collection is 0572- response, including the time for reviewing instructions, searching existing data sources,	0032. The time required to con	nplete this information colle	ction is estimated to averag	e 15 hours per					
UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE	BORROWER DESIGNATION								
FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION		PERIOD ENDED December, 2018							
INSTRUCTIONS - See help in the online application.	BORROWER NAM	BORROWER NAME Mecklenburg Electric Cooperative							
This information is analyzed and used to determine the submitter's financial si regulations to provide the information. The information provided is subject to			are required by contract	ct and applicable					
regulations to provide the information. The information provided is subject to	CERTIFICATION	1761 (5 0.0.0. 552)							
We recognize that statements contained herein concern a mat false, fictitious or fraudulent statement may render the ma	ter within the jurisdiction								
We hereby certify that the entries in this re of the system and reflect the status of									
ALL INSURANCE REQUIRED BY PART 1788 OF 7 CI PERIOD AND RENEWALS HAVE BEEN OBT BY THIS REPORT PURSUANT (ch	AINED FOR ALL POLIC	IES DURING THE PE		ING					
All of the obligations under the RUS loan documents have been fulfilled in all material respects.	unc	re has been a default in t ler the RUS loan docume cifically described in Par	ents. Said default(s) is/a						
DADT A CT	TATEMENT OF OPERAT	FLONG							
	I I I I I I I I I I I I I I I I I I I	EAR-TO-DATE							
ITEM	LAST YEAR	THIS YEAR (b)	BUDGET (c)	THIS MONTH (d)					
1 Operating Revenue and Patronage Capital	63,990,391	74,403,945	71,228,981	6,497,982					
2. Power Production Expense	0	0	0	0					
3. Cost of Purchased Power	38,382,977	46,646,134	45,654,153	4,047,619					
4. Transmission Expense	12,975	15,248	12,723	1,026					
 Regional Market Expense Distribution Expense - Operation 	0	0	0	0					
7 Distribution Expense - Maintenance	3,485,010	3,329,369	3,461,891 4,879,912	225,713					
8 Customer Accounts Expense	4,650,791 1,784,665	1,795,354	1,738,539	451,272 167,540					
9. Customer Service and Informational Expense	235,990	191,970	289,264	15,507					
10. Sales Expense	0	0	0	0					
11 Administrative and General Expense	4,364,646	4,323,745	4,504,022	372,109					
12. Total Operation & Maintenance Expense (2 thru 11)	52,917,054	62,236,538	60,540,504	5,280,786					
13 Depreciation and Amortization Expense	5,736,150	5,837,845	6,056,529	501,316					
14. Tax Expense - Property & Gross Receipts	0	0	0	0					
15. Tax Expense - Other	259	264	0	(2,625)					
16. Interest on Long-Term Debt	3,680,893	3,785,174	3,777,636	330,952					
17. Interest Charged to Construction - Credit	0	0	0	0					
18. Interest Expense - Other	38,091	45,922	48,601	1,762					
19. Other Deductions	68,774	68,063	38,600	531					
20. Total Cost of Electric Service (12 thru 19)	62,441,221	71,973,806	70,461,870	6,112,722					
21. Patronage Capital & Operating Margins (1 minus 20)	1,549,170	2,430,139	767,111	385,260					
22. Non Operating Margins - Interest	237,956	355,021	241,811	24,926					
23. Allowance for Funds Used During Construction	0	0	0	0					
24. Income (Loss) from Equity Investments	(545)	(128,373)	0	(128,373)					
25. Non Operating Margins - Other	31,015	11,859	32,374	216					
26. Generation and Transmission Capital Credits	1,300,964	644,004	613,291	644,004					
27. Other Capital Credits and Patronage Dividends	192,832	209,712	190,000	22,048					
28. Extraordinary Items	0	0	0	U					
29. Patronage Capital or Margins (21 thru 28)	3,311,392	3,522,362	1,844,587	948,081					

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UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE					BO	RROWER DESIGNATION				
						VA0031				
FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION					PER	RIOD ENDED				
INSTRUCTIONS - See help in the online application.					December, 2018					
			R DAT	ON TRANSMISS		AND DISTRIBUTION PLANT				
	1		TO-DAT			IND DISTRIBUTION I LANT	YEAR-TO	-DATE		
	ITEM	LAST YEAR (a)		THIS YEAR (b)		ITEM	LAST YEAR (a)	THIS YEAR (b)		
1. 1	New Services Connected	262		233	5. I	Miles Transmission	18.41	18.		
2. 5	Services Retired 165		98		Miles Distribution – Overhead	4,208.70	4,201.			
3. 1	Fotal Services in Place	34,096		34,232		Miles Distribution - Underground	246.81	262.		
	dle Services	2,761		2,880	8.	Total Miles Energized	4,473.92	4,482.		
	(Exclude Seasonals)	2,,01				(5+6+7)	1,115.52	1,102.		
				PART C, BAL	ANCI					
ASSETS AND OTHER DEBITS					20		AND OTHER CREDITS			
1. 2.	Total Utility Plant in Serv			190,387,041 2,801,573	30,	Memberships Patronage Capital		57,116,		
 Construction Work in Progress Total Utility Plant (1 + 2) 				193,188,614	32	Operating Margins - Prior Years		57,110,		
 Accum. Provision for Depreciation and Amort. 			62,880,732	33.	Operating Margins - Filor Tears		3,074,			
5. Net Utility Plant (3 - 4)			130,307,882	34.	Non-Operating Margins		7,677,			
6. Non-Utility Property (Net)				0	35.	Other Margins and Equities		2,811,		
7 Investments in Subsidiary Companies				5,000	<u>36.</u>	Total Margins & Equities (3)	(hey 35)	70,679,		
7. 8.	Invest. in Assoc. Org Pa			28,573,626	37.	Long-Term Debt - RUS (Net)	, (III & 55)	5,186,		
9. Invest in Assoc. Org Other - General Funds				0	38.	Long Term Debt - FFB - RUS G	uaranteed	72,682,		
10. Invest in Assoc. Org Other - Nongeneral Funds			1,808,902	39.	Long-Term Debt - Other - RUS					
11. Investments in Economic Development Projects			823,313	40.	Long-Term Debt Other (Net)		21,945,			
12. Other Investments			855	41.	Long-Term Debt - RUS - Econ.	Devel (Net)	823,			
13. Special Funds				771,295	42.	Payments – Unapplied		3,608,		
14.	Total Other Property & (6 thru 13)	& Investments		31,982,991	43.	Total Long-Term Debt (37 thru 41 - 42)		97,028,		
15	Cash - General Funds			2,678,453	44.	Obligations Under Capital Lease				
16. Cash - Construction Funds - Trustee			100	45.	Accumulated Operating Provisio and Asset Retirement Obligation	IS	2,036,			
17.	Special Deposits			0	46.	Total Other Noncurrent Lia	bilities (44 + 45)	2,036,		
18.	Temporary Investments			4,344,461	47.	Notes Payable		5 105		
19.	Notes Receivable (Net)			48,936	48.	Accounts Payable		5,499,0		
20.	Accounts Receivable - Sal			4,861,434	49.	Consumers Deposits		1,963,		
21.	Accounts Receivable - Oth Renewable Energy Credits			1,075,897	50.	Current Maturities Long-Term D)eht	4,381,4		
 Renewable Energy Credits Materials and Supplies - Electric & Other 			2,068,689	51 Current Maturities Long-Term Debt - Economic Development		4,381,47,2				
24.	Prepayments			164,162	52.	Current Maturities Capital Lease	S			
25.	Other Current and Accrue	d Assets		4,607,986	53.	Other Current and Accrued Liab		2,358,1		
26.	Total Current and Acc (15 thru 25)	rued Assets		19,851,127	54.	54. Total Current & Accrued Liabilities (47 thru 53)		14,249,5		
27.	Regulatory Assets			0	55	Regulatory Liabilities				
28.	Other Deferred Debits			2,556,281	56.	Other Deferred Credits		703,2		
29.	Total Assets and Other (5+14+26 thru 28)	Debits		184,698,281	57.	Total Liabilities and Other C (36 + 43 + 46 + 54 thru 56)	Credits	184,698,2		

MECKLENBURG ELECTRIC COOPERATIVE CASH FLOW REPORT FOR THE MONTH ENDING DECEMBER 2018

TOTAL CASH GENERAL FUNDS (RUS Form 7-Part C, L-15,16 &18) as of 11/30/18 9,021,482 ADDITIONS: Deposits-General 6.081.434 Deposits-Emporia 171,426 Deposits-Gretna 281,491 Interest Earned on Investments 39,210 Interest Earned on Checking Accounts 28 TOTAL ADDITIONS 6,573,589 TOTAL CASH AVAILABLE 15,595,071 EXPENDITURES: Routine 1,168,175 Wholesale Power Bills - ODEC and SEPA 3,680,300 RUS Cushion of Credit (Investment) 1,000,000 Commercial Paper Investement 650.000 Health Insurance - Anthem 125,636 NRECA 87,162 Customer Refunds 16,384 Payroll and Payroll Taxes 647,543 Inventory 186,634 Asplundh Tree Experts 183.970 Federated Rural Electric - insurance 73,283 Leclair Ryan PLLC - legal fees 7,898 Pee Dee Eelctric Co-Op, Inc. - Hurricane Michael 39.248 Sandra P. LangfordTreasurer - Real & Property Tax 199,210 Capital Credit Retirement 799,975 TOTAL EXPENDITURES 8,865,418 TOTAL CASH GENERAL FUNDS (RUS Form 7-Part C, L-15,16 &18) as of 12/31/18 6.729.652 SPECIAL FUNDS (RUS Form 7, Part C, Line 12 & 13) 772,150 TOTAL CASH GENERAL FUNDS AND SPECIAL FUNDS 7,501,802

Note: Long term debt payment to RUS in the amount of \$42,940.48 and FFB in the amount of \$1,144,925.29 were deducted from RUS Cushion of Credit Account on December 2018.

PAGE 3

UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE	BORROWER DESIGNATION
FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION	VA0031
INSTRUCTIONS - See help in the online application.	PERIOD ENDED December, 2018
PART D. NOTES TO FI	NANCIAL STATEMENTS
1. Part C, line 28, Other Deferred Debits, consists of	of the following:
a. Preliminary Investigation Charges for the Work	Plan - \$123,874
b. Retirement Security Pension Plan Prepayment -	\$2,432,407
2. Part C, line 25, Other Current & Accrued Assets \$4,356,137	includes unbilled revenue in the amount of
3. Part C, line 56, Other Deferred Credits, consists	of the following:
a. Sales Tax Surcharge - \$54,708	
b. Deferred Energy - \$648,584	
- CY	

PART D. CERTIFICAT	ION LOAN DEFAULT NOTES	
INSTRUCTIONS - See help in the online application.	PERIOD ENDED December, 2018	
FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION	VA0031	
UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE	BORROWER DESIGNATION	

	U	NITED		EPARTMEN UTILITIES	T OF AGRICULTU SERVICE	RE		BORROW	VER	DESIG	NATION	VA0031			
		F	LECTR	IC DIST	ATING REPO RIBUTION	RT		PERIOD	END		ecember,	2018			
INST	RUCTIONS - See I	nelp in	the online a	application											
	PLA	NT IT	EM		BAL BEGINNIN	RT E. CHANGE ANCE G OF YEAR a)		DDITIONS	1		MENTS	ADJUSTMENTS AND TRANSFERS (d)		BALANCE END OF YEAR (e)	
$1_{\mathrm{R}} = \mathbf{D}$	Distribution Plant					155,638,010	8	8,982,574		2,9	63,329			161,657,25	
2. G	General Plant					16,529,974	1	1,801,602			82,537			18,249,03	
3. H	leadquarters Plant					5,357,613		13,641						5,371,25	
4. Ir	Intangibles				1,119,641								1,119,64		
5. T	Transmission Plant		3,607,670			9,604			11,499			3,605,77			
	egional Transmissi Deration Plant	on and	Market			0									
7. A	Il Other Utility Plan	nt				384,077								384,07	
8.	Total Utility Plant in Service (J thru 7)			182,636,985	10	0,807,421		3,0	57,365			190,387,04			
9. C	Construction Work in Progress			4,536,209	(1,	,734,636)	12				1927	2,801,57			
10.	Total Utility Plant (8 + 9)		:	187,173,194		9,072,785	3,057,365		57,365			193,188,61			
					P/	ART F. MATER	IALS	S AND SUPPI	LIES	5					
	ITEM	BEGI	BALANC NNING O (a)		PURCHASED	SALVAGED (c)	,	USED (NET (d)	Г)		OLD (e)	ADJUSTME (/)	INT	BALANCE END OF YEAR (g)	
1. E	lectric			38,703	2,443,454	57,9	71	2,067,0	59		0	1	380)	2,068,68	
2. 0	Other			0					V			1			
					P	ART G. SERVIC	CEIN	TERRUPTI	ONS			·			
					AVERAG	GE MINUTES P	ER C	CONSUMER	BY (CAUSE					
	ITEM		POWER	R SUPPLI (a)		DR EVENT (b)	K	PLANNED (c)		ALL OTHER (d)		TOTAL (e)			
	resent Year			0.0	000	1,259.220		6.6		6.660		214.650		1,480.530	
2. Fi	ive-Year Average			10.3		305 280				.530		187.840		510.990	
_					PART H. EM	PLOYEE-HOU	_				ICS				
	umber of Full Time					104		Payroll - Expe	_					5,867,531	
_	mployee - Hours W					203,931	-		ayroll – Capitalized					3,019,163	
9. Ei	mployee - Hours W	orked -	- Overtime			22,680		Payroll - Othe		_				119,276	
	ITEM					DESCRIPTIO	-	GE CAPITA			IS YEAR (a)		CUMULATIVE (b)		
Ca	pital Credits - Distr	ibution	s	a. Gener	al Retirements		-					904,917		34,594,334	
					al Retirements					_		89,490		4,204,269	
					al Retirements (a	(+ b)	-					994,407		38,798,603	
2. Ca	pital Credits - Rece	ived		a. Cash I	Received From Re iers of Electric Por	tirement of Patro	nage	Capital by					- 22		
					Received From Ret rs for Credit Exter							48,399			
				c. Tot	al Cash Received							48,399		201 3	
					PART J. DUE	FROM CONSUL			_						
, Am	nount Due Over 60	Days		s		14,823		Amount Writ					\$	226,772	
			0.4		ENERGY EFFIC	CIENCY AND C	_		_						
	ticipated Loan Delin		%				-	Anticipated L			/0				
	tual Loan Delinquen		VTD					5. Actual Loan Default %							
lot	al Loan Delinquenc	y Dolla	rs y I D	s			0.	Total Loan De	etaul	t Dollars	S Y I D		S		

RUS Financial and Operating Report Electric Distribution

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-	UNITED		IMENT OF AGRICU	LTURE	BORROWE	BORROWER DESIGNATION							
	FINAN		PERATING REPO	DRT		VA0031							
INS	STRUCTIONS - See h	elp in the online	application		PERIOD EN	NDED December	·, 2018						
			PA	RT K. kWh PUR	CHASED AND T	OTAL COST							
No	ITEM	SUPPLIER CODE	RENEWABLE ENERGY PROGRAM NAME	RENEWABLE FUEL TYPE	kWh PURCHASED	TOTAL COST	AVERAGE COST (Cents/kWh)	INCLUDED IN TOTAL COST - FUEL COST ADJUSTMENT	INCLUDED IN TOTAL COST - WHEELING AND OTHER CHARGES				
	(8)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)				
1	Old Dominion Electric Coop	40229			616,211,484	44,529,773	7.23	1,506,447	25,783				
2	Southeastern Power Admin	29304			44,750,626	2,116,120	4.73		849,253				
3	*Miscellaneous	700000	GREENCO	Solar - photvoltaic		241	0,00						
	Total				660,962,110	46,646,134	7.06	1,506,447	875.036				

	UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION	BORROWER DESIGNATION VA0031
INSTRU	CTIONS - See help in the online application	PERIOD ENDED December, 2018
	PART K. kWh PURCHA	SED AND TOTAL COST
No		Comments
1		
2		
3	Renewable energy Credits	

	UNITED STATES DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION		BORROWER DESIGNATION VA0031			
INSTR	FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION UCTIONS - See help in the online application. PART L		PERIOD ENDED December, 2018			
	PART L.	LONG	TERM LEASES			
No	NAME OF LESSOR (a)		TYPE OF PROPERTY (b)	RENTAL THIS YEAR (c)		
	TOTAL					

own

	PARTMENT OF AGRICULTURE JTILITIES SERVICE	BORROWE	BORROWER DESIGNATION						
	D OPERATING REPORT IC DISTRIBUTION	PERIOD EN	PERIOD ENDED December, 2018						
INSTRUCTIONS - See help in the onlin	application.								
PART M. ANNUAL MEETING AND BOARD DATA									
1 Date of Last Annual Meeting	2. Total Number of Members	3. Number of Me	Number of Members Present at Meeting 4. Wa						
6/20/2018	25,593		362	У					
5. Number of Members Voting by Proxy or Mail	6. Total Number of Board Members	7. Total Amount for Board Mer	t of Fees and Expenses mbers	8. Does Manager Have Written Contract?					
3,070	\$	147,554	У						

RUS Financial and Operating Report Electric Distribution

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Contraction

	UNITED STATES DEPARTMENT OF A RURAL UTILITIES SERVIC FINANCIAL AND OPERATING I ELECTRIC DISTRIBUTIC	CE REPORT	BORROWER DESIGNATION VA0031							
NST	RUCTIONS - See help in the online application.		PERIOD ENDED December, 2018							
	PART N.	LONG-TERM DEBT AND	DEBT SERVICE REQUIR	EMENTS						
No	ITEM	BALANCE END OF YEAR (a)	INTEREST (Billed This Year) (b)	PRINCIPAL (Billed This Year) (c)	TOTAL (Billed This Year) (d)					
1	Rural Utilities Service (Excludes RUS - Economic Development Loans)	5,186,069	104,235	404,855	509,090					
2	National Rural Utilities Cooperative Finance Corporation	20,589,587	1,008,598	1,692,015	2,700,613					
3	CoBank, ACB									
4	Federal Financing Bank	72,682,689	2,557,479	1,875,537	4,433,016					
5	RUS - Economic Development Loans	823,313		47,232	47,232					
6	Payments Unapplied	3,608,384								
7	Principal Payments Received from Ultimate Recipients of IRP Loans									
8	Principal Payments Received from Ultimate Recipients of REDL Loans									
9	Principal Payments Received from Ultimate Recipients of EE Loans									
10	Farmer Mac	1,355,640	91,904	235,265	327,169					
	TOTAL	97,028,914	3,762,216	4,254,904	8,017,120					

<u>4,355,640</u>91,904 97,028,914 3,762,216

UNITED STATES DEPARTM RURAL UTILITI		BORROWER DESIGNATIO	DN	
FINANCIAL AND OPI ELECTRIC DIS		PERIOD ENDED	er, 2018	
INSTRUCTIONS - See help in the online				
	PART O. POWER REQUIREM	IENTS DATABASE - ANNUA		
CLASSIFICATION	CONSUMER SALES & REVENUE DATA	DECEMBER (a)	AVERAGE NO. CONSUMERS SERVED (b)	TOTAL YEAR TO DATE <u>(c)</u>
1. Residential Sales (excluding	a. No. Consumers Served	29,480	29,449	
seasonal)	b. kWh Sold			380,673,53
	c. Revenue			51,737,10
2. Residential Sales - Seasonal	a. No. Consumers Served			188 N. 2009 For 25
	b. kWh Sold	ST MARTIN SALA		
	c. Revenue		all and the address	
3. Irrigation Sales	a. No. Consumers Served			
	b, kWh Sold	MICE RESIDENCE		
	c. Revenue			
4. Comm. and Ind. 1000 KVA or Less	a No. Consumers Served	1,496	1,504	
	b, kWh Sold	1,190	1,501	68,064,964
	c. Revenue			7,469,870
5. Comm. and Ind. Over 1000 KVA	a. No. Consumers Served	26	25	7,469,870
5. Comm, and mu, over 1000 KVA	b, kWh Sold	20	25	140 (30 70)
	c. Revenue		a ser a ser de la ser <mark>-</mark>	149,630,79
6. Public Street & Highway Lighting	a. No. Consumers Served			11,057,270
	b, kWh Sold		Tradition of the State Party	
	c. Revenue			
7. Other Sales to Public Authorities	a, No. Consumers Served	350	348	
	b. kWh Sold	011	510	34,023,760
	c, Revenue			3,421,699
8. Sales for Resale - RUS Borrowers	a, No. Consumers Served			5,121,05
	b. kWh Sold	Destant and Destant		
	c. Revenue			
9. Sales for Resale - Other	a, No Consumers Served			
	b. kWh Sold			
	c. Revenue			
10. Total No. of Consumers (lines 1		31,352	31,326	
11. Total kWh Sold (lines 1b thru 9				632,393,056
12. Total Revenue Received From S				73,665,948
Electric Energy (<i>lines 1 c thru 9 c</i> 13. Transmission Revenue)			
14. Other Electric Revenue				737,99
15. kWh - Own Use				879,498
16. Total kWh Purchased				660,962,110
17. Total kWh Generated				
18. Cost of Purchases and Generation				46,661,382
19. Interchange - kWh - Net				
20 Peak - Sum All kW Input (Metered Non-coincident Coincident				174,725

RUS Financial and Operating Report Electric Distribution

Revision Date 2014

UNITED STATES DEPARTMEN RURAL UTILITIES	SERVICE		BORROWER DESI	GNATION VAC	0031	
FINANCIAL AND OPERA						
ELECTRIC DISTR			PERIOD ENDED	December, 201	8	
INSTRUCTIONS - See help in the online applicati						
	PART P.	ENERGY EFFICI	ENCY PROGRAMS		TOTAL TO DA	TE
	No. of	Amount	Estimated	No. of	Amount	Estimated
CLASSIFICATION	Consumers (a)	Invested (b)	MMBTU Savings (c)	Consumers (d)	Invested (e)	MMBTU Savings
1, Residential Sales (excluding seasonal)						
2. Residential Sales - Seasonal						
3 Irrigation Sales						
4. Comm. and Ind. 1000 KVA or Less						
5. Comm. and Ind. Over 1000 KVA						
6. Public Street and Highway Lighting						
7. Other Sales to Public Authorities						
8. Sales for Resale – RUS Borrowers						
9. Sales for Resale – Other						
10. Total						
C		, ,				

	UNITED STATES DEPARTMENT OF AGRICU RURAL UTILITIES SERVICE	LTURE B	BORF	ROWER DESIGNATION	A 0031			
	FINANCIAL AND OPERATING REPOR ELECTRIC DISTRIBUTION INVESTMENTS, LOAN GUARANTEES AND	P	ERIC	DD ENDED December, 2	018			
C. Id	TRUCTIONS - Reporting of investments is required by 7 C entify all investments in Rural Development with an 'X' in cation.	column (e). Both Inclue	ded' a	and 'Excluded' Investment	is must be reported. See he	alance Sheet items in F Ip in the online		
	PART Q. SECTION I. IN	VESTMENTS (See In	stru					
No	DESCRIPTION (a)	INCLUDED (\$) (b)		EXCLUDED (\$) (c)	INCOME OR LOSS (\$) (d)	RURAL DEVELOPMENT (e)		
2	Investments in Associated Organizations							
	NRUCFC			1,424,482	63,775			
_	ODEC Patronage Capital			27,379,326	644,004			
	VMD Association of Electric Cooperatives	33,9	20					
	NRUCFC Membership Certificates			1,000				
	NRTC Membership Certificates	1,0	000					
	United Utility Supply Patronage Capital	35,8	382					
	Electrical Research & Mfg Cooperative	58 0)43		14,321			
	Tarheel Electric Membership Association, Inc.	49,6	-		18,874			
	NRUCFC Patronage Capital			667,003	125,309			
	National Rural Telecommunications Cooperative	18_3	63		.20,507			
	Touchstone Energy Cooperative		87					
1	TEC Trading, Inc.	347,5						
1	Federated Rural Electric Insurance Exchange	300.6	<u> </u>		51.208			
	EMPOWER Broadband, Inc.	5.0	-		(128,373)			
	Arkansas Electric Cooperative, Inc.	3.3	-		(128,575)			
	Co-Bank	J,J	1.54	1,000				
		50.9		1,000	22.048			
- 1	National Information Solutions Cooperative	59,8			22,048			
_	Buggs Island Telephone Cooperative		942					
-	GRESCO Utility Supply, Inc.		00	20 472 011	011.166			
_	Totals	914.7	18	29,472,811	811,166			
3	Investments in Economic Development Projects							
-	Economic Developement Project-Oran Safety Glass	800,1	-			Х		
-	Economic Develepement Project-Good Earth Peanut Co.	23,1	- 1			x		
4	Totals	823_3	13					
4	Other Investments		_					
4	Charter Communications	·	55					
_	Totals	8	55					
5	Special Funds							
	NRECA Deferred Compensation	591,0	19					
_	NRECA Deferred Compensation-Directors	180,2	76					
	Totals	771,2	.95			·		
6	Cash - General							
	Checking Accounts			2,678,453		· · · · · · · · · · · · · · · · · · ·		
	Totals			2 678 453				
8	Temporary Investments							
	Member Prepayment-Old Dominion Electric	4,344,4	61					
	Totals	4,344,4	61					
9	Accounts and Notes Receivable - NET							
_	Accounts Receivable-Other	871,1	13					
-	Notes Receivable-Oran Safety Glass	19,4				х		
1	Notes Receivable-Good Earth Peanut, Inc.	27,7	_			x		
1	Accounts Receivable - ODEC	206,4	_					
- 1	Totals	1,124,8	_					
- 1	TOTAL INVESTMENTS (1 thru 10)	7,979,4	_	32,151,264	811,166			

	UNITED STATES DEPARTMENT OF A RURAL UTILITIES SERVI		BORROWER DESIGNATION VA0031 PERIOD ENDED December, 2018					
	FINANCIAL AND OPERATING ELECTRIC DISTRIBUTI(INVESTMENTS, LOAN GUARANTEE	ON						
INST	RUCTIONS - Reporting of investments is require	d by 7 CFR 1717 Subpart N	Investment categories reporte	d on this Part correspond to	Balance Sheet items in Part			
C. Ide	entify all investments in Rural Development with a	an 'X' in column (e). Both 'Inc	cluded' and 'Excluded' Investm	ients must be reported. See h	nelp in the online			
C. Ide applic	entify all investments in Rural Development with a cation.	an 'X' in column (e). Both 'Inc PART Q. SECTION II.	cluded' and 'Excluded' Investm	ents must be reported. See h	nelp in the online			
C. Ide	entify all investments in Rural Development with	an 'X' in column (e). Both 'Inc	cluded' and 'Excluded' Investm	LOAN BALANCE	RURAL			
C. Ide applic	entify all investments in Rural Development with a cation.	an 'X' in column (e). Both 'Inc PART Q. SECTION II.	cluded' and 'Excluded' Investm	ents must be reported. See h	nelp in the online			
C. Ide applic	ORGANIZATION	an 'X' in column (e). Both 'Inc PART Q. SECTION II.	cluded' and 'Excluded' Investm	ents must be reported. See h	RURAL			

Some

	TOTAL						
	(a)	(b)	(5) (c)	(\$) (d)	(e)		
No	ORGANIZATION	MATURITY DATE	ORIGINAL AMOUNT	LOAN BALANCE	RURAL		
		SECTION	IV. LOANS				
[Tota			e (Section II, 5d) to Total Utili	ty Plant (Line 3, Part	4,13 %		
	RURAL UTILITIES SERVICE VA0031 FINANCIAL AND OPERATING REPORT ELECTRIC DISTRIBUTION INVESTMENTS, LOAN GUARANTEES AND LOANS PERIOD ENDED December, 2018 JCTIONS - Reporting of investments is required by 7 CFR 1717, Subpart N. Investment categories reported on this Part correspond to Balance Sheet items in Part ify all investments in Rural Development with an 'X' in column (e). Both 'Included' and 'Excluded' Investments must be reported. See help in the online ion. SECTION III. RATIO OF INVESTMENTS AND LOAN GUARANTEES TO UTILITY PLANT of Included Investments (Section I, 11b) and Loan Guarantees - Loan Balance (Section II, 5d) to Total Utility Plant (Line 3, Part is report] 4.13 % ORGANIZATION MATURITY DATE ORIGINAL AMOUNT LOAN BALANCE RURAL PENERO						
INSTI C. Ide applic	entify all investments in Rural Development wit	ired by 7 CFR 1717, Subpart N. h an 'X' in column (e). Both 'Inc	Investment categories reported luded' and 'Excluded' Investme	d on this Part correspond to ents must be reported. See I	Balance Sheet items in Part help in the online		
	ELECTRIC DISTRIBUT	TION	December, 2018				
	UNITED STATES DEPARTMENT OF RURAL UTILITIES SER		BORROWER DESIGNATIO				

INSTRUCTIONS-See REA Bulletin 1717B-2

PART R. POWER REQUIREMENTS DATA BAS

CLASSIFICATION	CALES		IANILADY	EEBDUADY	MADOU		MAY	-	UINE
CLASSIFICATION	SALES AND		JANUARY	FEBRUARY	MARCH	APRIL	MAY		JUNE
	REVENUE DATA		(a)	(b)	(c)	(d)	(e)	Ļ	(f)
	a. No. Consumers Served	+	29,434		29,404	29,419	29,411	_	29,44
1. Residential Sales	b. KWH Sold	-	47,924,355				25,235,068		30.533,29
(excluding seasonal)	c. Revenue a. No. Consumers Served	\$	6,014,881	\$ 4,195,289	\$ 4,705,256	\$ 3,233,915	\$ 3,682,840	13	4,123,77
2. Residential Sales -	b. KWH Sold				· · · · · · · · · · · · · · · · · · ·			<u> </u>	
Seasonal	c. Revenue	-						-	
	a. No. Consumers Served							\vdash	
3. Irrigation Sales	b. KWH Sold	1							_
5	c. Revenue								
	a. No. Consumers Served		1,513	1,509	1,509	1,508	1,512	i	1,50
4. Comm. and Ind.	b. KWH Sold		5,784,299	4.942.592	5,215,425	4,452,316	5,437,482		5,754,29
1000 KVA or Less	c. Revenue	\$	626,444					\$	632,63
	a. No. Consumers Served	_	24	24	24	24	25		2
5. Comm. and Ind.	b. KWH Sold		13,182,940	12,218,296	13,303,345	12.542.095	13,703,308		13,014,34
Over 1000 KVA	c. Revenue	\$	915,051	\$ 1,018,869	\$ 955,222	\$ 906,086	\$ 1,015.715	\$	918,99
	a. No. Consumers Served								
Public Street & Highway									
Lighting	c. Revenue								
	a. No. Consumers Served		346	344	344	345	345		34
7. Other Sales to Public	b. KWH Sold		3,091,761	2.875,307	2,631,617	2,355,540	3,092,203		2,867,38
Authority	c. Revenue	\$	303.474	\$ 301,865	\$ 273,354	\$ 241,000		\$	282,894.
	a. No. Consumers Served								
3. Sales for Resales-REA	b. KWH Sold								
Borrowers	c. Revenue								
	a. No. Consumers Served								
9. Sales for Resales-Other									
	c. Revenue								
0. TOTAL No. of Consum	ners (lines 1a thru 9a)		31,317	31,288	31,281	31,296	31,293		31,32
1. TOTAL KWH Sold (line	es 1b thru 9b)		69,983,355	49,640,907	56,282,836	41,335,087	47,468,061		52,169,330
2. TOTAL Revenue Rece 'Electric Energy (line 1		\$	7,859,850	\$ 6,093,319	\$ 6,533,292	\$ 4,891,846	\$ 5,625,433	\$	5,958,295
3. Other Electric Revenue		\$	55,440	\$ 65,881	\$ 65,879	\$ 60,154	\$ 61,716	\$	49,348
4. KWH - Own Use	U		95,046	75,003	62,350	58,575	65,350		77,339
5. TOTAL KWH Purchase	ed		74,178,983	49,635,124	58,236,613	43,480,892	49,839,271		54,272,581
6. TOTAL KWH Generate	ed								
7. Cost of Purchases and	Generation	\$	5,033,258	\$ 3,793,086	\$ 3,397,745	\$ 3,299,277	\$ 3,601,111	\$	3,953,752
8. Interchange - KWH - N	et								
9. Peak - Sum All KW Inp	ut (Metered)	+	174,725 190,041	136,896 143,092	113,703 126,511	84,405	98,548 118,266		116,79

	1	Mecklenburg E		Coopera	live		REA	A USE ONLY							
DECEMBER 2018															
	1	4	_	PART	R.	POWER R	EQL	JIREMENTS	DA	TA BASE			_		
_	-	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		TOTAL	
		(g)		(h)		(i)		(i)		(k)		(I)	(Col	umns a thr	
	a	29,465		29,488		29,469		29,466		29,498		29,480			
	b	32,846,340 \$ 4,451,811		793,983		33,758,209		19,849,539	-	30,520,594	-	38,489,856		380,673,5	
1	C a	\$ 4,451,811	p 4	,639,590	\$	4,547,425	\$	2,994,164	\$	4,314,744	\$	4,833,416	\$	51,737,1	
	b				-		-								
2	С												\$		
	а				11				-						
	b														
3	C	4 502		4 407	-	1 400	_	4 400		4 407	_	4 400	\$		
	a b	1,503 5,899,996	7	1,497	-	1,498 7,221,336	-	1,498 5,426,128		1,497 5,179,522	-	1,496 5,208,191		68,064,9	
4	C	\$ 645,200	\$	784,740	\$	756,264	\$	585,232	S	585,661	\$	550,273	\$	7,469,8	
	a	25	1	25	É	25	Ť	26		26		26		.,	
	b	12,855,279		,621,657		13,119,179		9,220,616		10,979,283		11,870,449		149,630,7	
5	С	\$ 962,568	\$ 1	,020,619	\$	962,996	\$	718,635	\$	861,521	\$	781,002	\$	11,037,2	
	a		-						_						
~	b		-		-		-				-		6		
6	c			070		250	-						\$		
	a b	2,954,018	2	350		350 3,134,462	_	351 2,395,889		352 2,573,869	•	350 2,779,902		24 022 7	
7	c	\$ 292,354	\$	324.257	\$	311,028	S	2,395,669	S	267,091	\$	270,366		34,023,7	
	a	<u>v</u> 232,334	-	524,257	9	511,020		242,331	-	207,091	Ψ	270,300		5,421,0	
	b				-		-		X						
8	С												\$	-	
	а														
	b														
9	С		-				K		_				\$		
10		31,341	i.	31,360		31,342		31,341		31,373		31,352		-	
11		54,555,633	59	,230,823		57,233,186		36,892,172		49,253,268		58,348,398		632,393,0	
12		\$ 6,351,932	\$6	,769,206	\$	6,577,713	\$	4,540,988	\$	6,029,017	\$	6,435,056	\$	73,665,9	
13		\$ 56,062	\$	60,073	\$	64,050	\$	67,507	\$	68,961	\$	62,925	\$	737,9	
14		76,820		81,628		80,474		69,801		63,378		73,734		879,4	
15		58,368,480	60,	,299,606		53,669,587		45,396,591		52,788,569		60,795,813		660,962,1	
16														-	
17		\$ 4,182,672	\$4,	,172,271	\$	4,009,926	\$	3,324,970	\$	3,830,447	\$	4,047,619	\$	46,646,1	
18														,	
19	-	123,341		116,827		118,780		100,735		115,798	1	118,340		174,7	
		134,064		129,652		129,281		110,425		124,307		134,292		190,0	



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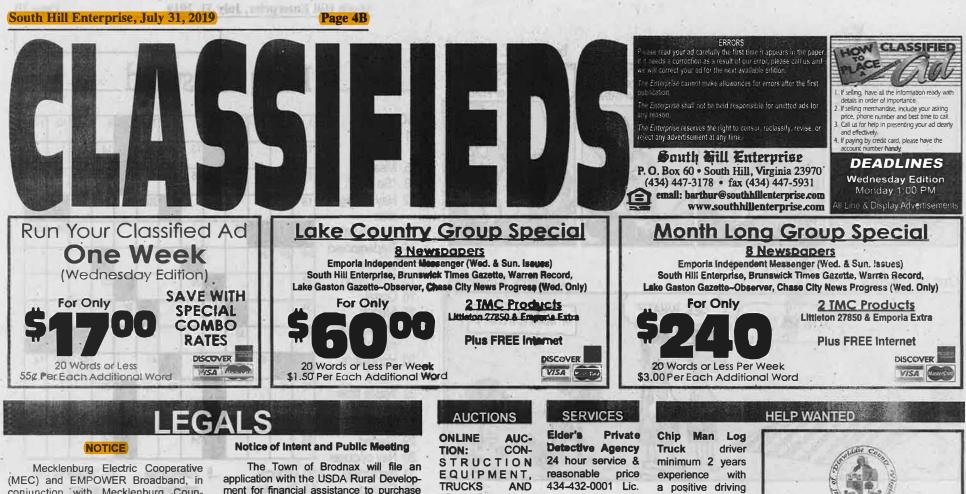


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conjunction with Mecklenburg County, are preparing an application to the Department of Housing and Community Development (DHCD) for Virginia Telecommunication Initiative (VATI) Grant Funding to extend high-speed broadband to Bracey area residents just off Highway 903, along Beechwood Road, McKayla Lane, Rachel Court, Anna Lane, Hicks Drive, and Waynes.Court. Approximately 50 households will be passed with fiber to the home

This advertisement is notice of a 30day public comment period as required. For additional information regarding this project piease contact:

David Lipscomb. Vice President Member and Energy Services

MEC/EMPOWER Office Hours are Monday - Friday 8:00 AM - 5:00 PM -Phone: 434.372.6244 P.O. Box 2451, Chase City VA 23924

EMPOWER@MECKELEC.ORG (7/31c

NOTICE OF TRUSTEE'S SALE **VARIOUS LOTS - RIVER RIDGE GOLF** AND CAMPING CLUB LACROSSE MAGISTERIAL DISTRICT **MECKLENBURG COUNTY, VIRGINIA** SALE DATE: SATURDAY, AUGUST 10, 2019 10:00 a.m.

As a result of delinquent assessments and/or other charges owed to River Ridge Association, Inc., and pursuant to the Declaration of Protective Covenants and Agreement of River Ridge Golf and Camping Club, and pursuant to Virginia Code Section 55-508, et seq., the undersigned Trustee will offer for sale the following lots at public auction at the

CLUBHOUSE OF RIVER RIDGE GOLF AND CAMPING CLUB, 705 LARA-MIE DRIVE, BRACEY, VIRGINIA ON SAT-URDAY, AUGUST 10, 2019 at 10:00 a.m. Lot 25A, Adventure Village - TMP

201A02-01-025 Lot 52B, Buffalo Village - TMP 201A02-05-052B

Lot 86B, Buffalo Village - TMP 201A03-01-086B

Buffalo Village - TMP Lot 116B. 201A03-01-116B

Lot 28D, Deer Chase Village - TMP 201A06-01-028D

ment for financial assistance to purchase a pumper truck to be utilized by the Fire Department. A Public meeting for comments will be held at 7:00 p.m. on Wednesday August 5, 2019 at the Brodnax Town Office to discuss the proposed project and to provide the opportunity for public comment. (7/31c

TRUSTEE SALE 401 West High St, South Hill, VA 23970 Mecklenburg County

In execution of a Deed of Trust in the original principal amount of \$99,500.00, dated October 29, 2004 recorded in the Clerk's Office of the Circuit Court of the Mecklenburg County, Virginia, in Docu-ment No. 040006613, at Page 0028, default having occurred in the payment of the Note thereby secured and at the request of the holder of said Note, the undersigned Substitute Trustee will offer for sale at public auction at the entrance to the Circuit Court of Mecklenburg County, 393 Washington Street, Boydton, on August 9, 2019 at 10:30 AM the property described in said deed, located at the above address and briefly described as:

Beginning at a point on the South line of High Street which point is 441 feet Northwest of Lunenberg Avenue; thence along High Street N. 65-34 degrees W. 89 feet to a point with property formerly C. H. Moseley; thence with Moseley property S. 24-25 degrees W. 210 feet to a comer stake; thence S. 65-34 degrees 89 feet to a comer stake; thence N. 244-26 degrees E. 210 feet to the point of beginning on High Street, Map Number 078A12 A 124, with improvements thereon.

Subject to any and all covenants, conditions, restrictions, easements, and all other matters of record taking priority over the Deed of Trust, if any, affecting the

aforesaid property. TERMS OF SALE: CASH: A deposit of \$20,000.00 or 10% of the sales price, whichever is lower, cash or certified check will be required at the time of sale, but no more than \$10,000.00 of cash will be accepted, with settlement within fifteen (15) days from the date of sale. Sale is subject to post sale confirmation that the borrower did not file for protection under the U.S. Bankruptcy Code prior to the sale which fects the validity of the sale, as well as to post-sale confirmation of the status of the loan with the loan servicer including, but not limited to, determination of whether the borrower entered into any repayment agreement, reinstated or paid off the loan prior to the sale. In any such event, the sale shall be null and void, and the Purchaser's sole remedy, in law or equity, shall be the return of his deposit without interest. Addltional terms may be announced at the time of sale. Pursuant to the Federal Fair Debt Collection Practices Act, we advise you that this firm is a debt collector attempting to collect the indebtedness referred to herein and any information we obtain will be used for that purpose. SAMUEL I. WHITE, P.C., Substitute Trustee. This is a communication from a FOR INFORMATION CONTACT: SAMUEL I. WHITE, P.C. (68334), 5040 Corporate Woods Drive, Suite 120, Virginia Beach, Virginia 23462 757-457-1460 - Call Between 9:00 a.m. and 5:00 p.m. or visit our website at www.siwpc.net (7/24, 7/31c

TRAILERS. Primoris Fleet Realignment Auction. Items located in Chesapeake, VA. Bid online Sun. Aug Tues. 4 Aug 6 at 11 a.m. at motleys.com. Motleys Industrial. 1-877-MOTLEYS. VA16, (7/31nc

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FOR RENT Mountein Home for rent by owner in Linville, NC. 4 BR. gated community. 7 day minimum, \$6,000. Limited available. dates Call 434-792-6993

(7/31enc -





Bethlehem **Baptist** Church is seeking a pastor. Please send inquiries to: Pastor Search Committee PO Box 164, Wise NC 27594 (7/10 -7/31p

Supervisor for Warehouse Kenbridge, VA must have experience in supervising 10 to 30 employees, must be a team player, send resume to jessica. williams@ penmac.com (7/24, 7/31p

Class A CDL Wanted. Drivers Road and Regional, must pass DOT drug and background screening. Two years experience. Call 252-532-4403. (7/31, 8/7p



Firefighter/Medic Dinwiddie County is seeking a Firefighter/Medic to perform advanced human support work responding to emergency calls, providing emergency medical services and fire suppression, preparing and maintaining detailed records, and related work as assigned. Visit www.dinwiddieva.us

for detailed information and how to apply by 08/09/2019.

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Lot 37D, Deer Chase Village -- TMP 201A03-03-037D Lot 62F, Fox Hollow Village - TMP 201A05-04-062F Lot 63F, Fox Hollow Village - TMP 201A05-04-063F Lot 16G, Groundhog Village - TMP 201A05-03-016G Lot 72H, Hare Village - TMP 201A02-02-072H Lot 94H, Hare Village - TMP 201A02-02-094H Lot 114H, Hare Village - TMP 201A02-02-114H Lot 1K, Kangaroo Village - TMP 201A02-02-158H Lot 30L, Leisure Village - TMP 201A01-01-030L Lot 61L, Leisure Village - TMP 201A01debt collector. 01-061L Lot 62L, Leisure Village - TMP 201A01-01-062L Lot 121M, Moose Village - TMP 201A01-02-121M Lot 134M, Moose Village - TMP 201A01-02-134M TERMS OF SALE NOTICE: A MINIMUM OF 10% OF BID AMOUNT WILL BE REQUIRED TO BE PAID IN CASH OR CERTIFIED FUNDS PAYABLE TO THE TRUSTEE NAMED BELOW AT THE TIME AND PLACE SAID BID AMOUNT IS ACCEPT-ED - NO OTHER FORM OF DEPOSIT WILL BE ACCEPTED; balance due within thirty (30) days of sale. Title will be con-



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series race, including the Grand Group, Inc. found approxi- and we are proud to add s Sat- Sport (GS) and Touring mately 270,000 visitors our support during the nia is Car (TCR) classes, show- head to VIR on a yearly track's largest race of the Frand casing the newest high- basis, generating a signifi- year," said Rita McClenny, to the performance sports cars, cant \$237 million in total lenge coupes and sedans. VIR is economic impact each year ginia Tourism Corporation. a large driver of tourism within the Commonwealth "We're excited to celebrate

> the Virginia Tourism Cor- ing forward to fans disporation be part of this covering for themselves invigorating IMSA race why Virginia is for Racing weekend and honored for Lovers. our track to be home to Lovers Grand Prix," said Connie Nyholm, owner and CEO of VIR.

> brings out our biggest qualifying, car corrals and crowds of the year, thanks more. Visitors also can to a jam-packed schedule supplement their weekend of high-speed events, fam- with many activities like ily fun and more. It's a karting, autograph sesto miss, and we can't wait at the Oak Tree Tavern. to welcome both Virginians this August."

ration is celebrating 50 tors and Virginians alike, military ID.

president and CEO of Virracing in Virginia at such "We're thrilled to have an iconic course and look-

Race weekend activities the Virginia is for Racing don't stop on the track - the entertainment continues with a skydiver performance, Michelin hot lap "This race weekend ride-alongs, practice and weekend folks don't want sions, fan forum or dining

Advanced tickets for the and visitors to the track IMSA WeatherTech Sports-Car Championship race This year marks the 50th weekend are \$50 for Frianniversary of the Vir- day-only, \$55 for Saturdayginia is for Lovers slogan. only, \$60 for Sunday-only, Virginia Tourism Corpo- \$70 for a two-day Saturday and Sunday ticket and \$80 Years of Love across the for a three-day ticket. All state with special lovers tickets will be an addilagers at breweries and tional \$10 if purchased at lovers blends at winer- the gate. Children 16 and ies, 1969 inspired meals under are admitted free and prices at restaurants, of charge with a paying special 50 Years of Love adult, and parking is also events, 1969-themed con- free. Active military are tests, giveaways and more. admitted free of charge, "VIR is a sought-after and veterans receive a 50 destination for both visi- percent discount with valid

»SPORTS NOTES

HCHS volleyball team tryouts start Monday

Tryouts for the Halifax County High School varsity and junior varsity volleyball teams will begin Monday, and continue through Wednesday with tryouts being held from 2 p.m. until 4 p.m. each day at the Halifax County High School gym. Students must have a completed Virginia High School League physical exam form on file at Halifax County High

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LAKESIDE HOME IM- ÉMERGENCY MEDICAL PROVEMENTS INC Siding, windows, seamless gutters, roofing, decks, free estimates. Call 579-6274, 12-18-xc

MISCELLANEOUS

FOR SALE Twin beds, daybed, bookcase bed frame, small wood stove, chest of drawers, total gym, cuckoo clock, upholstered chaise. Call 434-579-1375. 8-2-1p

FOR SALE Kimball spinet piano, beautiful cherry finish. Bench included. \$250. 434-222-4852. 8-2-1p

FOR RENT/LEASE

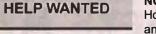
FOR RENT 1 bedroom apartment in Halifax, furnished, \$430/ mo., water included. Call 434-349-6807. 8-2-1c

FOR RENT: Mobile home for rent in Clarksville area. 3 bedroom, 2 bath - all utilities 434-738-8004. included. 7-31-2c

FOR RENT: 2 bedroom, 1 bath house in Turbeville area. \$500 plus deposit. 8-2-1c

YARD SALES

BIG YARD SALE: Aug. 2 and 3. 1092 Wolf Trap Road - Friday - 4 to 7 p.m. Saturday 7 a.m. until. Lots of items. Something for everyone. Cheap prices. 8-2-1p



TECHNICIAN - Job du-

ties will include operation

of ambulances and wheel-

chair vans. Position requires

positive attitude, integrity

and work ethic. Strongly

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We offer full set of benefits

including vacation and sick

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work history and certifica-

HELP WANTED Residential

Care Facility is seeking a li-

censed administrator. Must

have completed at least 30

credit hours at an accredited

college, 15 of which should

be business or human ser-

vices. Must have at least

supervisory experience car-

ing for adults in a residential

group facility. Retired nurses

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HELP WANTED Small resi-

dential care facility is seek-

ing a certified medication

aide. Must also be a certified

nursing assistant and be

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Office Experience. Please

call 434-470-7070. 7-26-4c

476-7086. 8-2-2p

8-2-2p

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NOW HIRING: Angel Wings Home Care hiring CNA's and PCA's. Apply in person. Serious inquiries only. 434-476-8710. 7-31-2p

CLASSIFIEDS

TRUCK DRIVERS WANT-ED CDL license required 336-599-0074. 7-22-6c

PUBLIC NOTICE

OFFICIAL NOTICE Mecklenburg Electric Cooperahandwritten summary of tive (MEC) and EMPOWER Broadband, in conjunction tions to Patient Transport, with Halifax County, are PO Box 698, Halifax, VA preparing an application to the Department of Housing and Community Development (DHCD) for Virginia Telecommunication Initiative (VATI) Grant Funding to extend high-speed broadband to six areas to include a portion of members along the following roads: Howard P. Anderson Rd., Hunta year of administrative or Creek Rd., Clarkton Rd., Mt. Laurel Rd., Stage Coach Rd., Bull Creek Rd., Chatham Rd., Leda Rd., Bill Tuck Hwy. and Aaron's Creek Rd. Approximately, 741 premises will be passed with fiber-optic cable. This advertisement is notice of 30-day public comment а period as required. For additional information regarding this project please contact: David Lipscomb, Vice President Member and Energy Services. MEC/EMPOWER Office Hours are Monday -Friday 8:00 AM - 5:00 PM Phone: 434.372.6244 P. O. Box 2451, Chase City VA 23924 EMPOWER@ MECKELEC. ORG. 8-2-1c

NOTICE OF SUBSTITUTE Lot #319; thence Lot #319 Terms: At least 10% cash to 315, inclusive, N. 3 de- on day of sale; balance TRUSTEE'S SALE OF grees 12' W. 144.44 feet to due within 30 days. FOR 1052 1st St., South Boston, the point of beginning, and INFORMATION CONTACT: Virginia 24592 (Halifax Co., containing 2.40 acres, more Seth E. Twery, Esq. Seth E. VA) In execution of a Deed or less, according to a plat Twery, P. C. P. O. Box 185 of Trust, from DORIS ELof survey made by J. Walter Lynchburg, VA 24505-0185 LIOTT LLOYD, dated April Jones, Jr., CLS, dated April 28, 2000, in the original principal amount of \$33,775.01, 23, 1954, and recorded in the Clerk's Office of the Cirrecorded in the Circuit Court Clerk's Office of the County cuit Court of Halifax County, Virginia, in Deed Book 247, of Halifax, Virginia, in Deed page 397. Tax Map Refer-Book 749, at page 567, ence #07EN61MM228E911. (Seth E. Twery, P. C. having Included with the sale is been appointed Substitute Trustee by Instrument of re- a 2000 Clayton Manufaccord in the aforesaid Clerk's tured Home - VIN No. CW-Office in Deed Book 1206, P008425TN. Sale subject to at page 800), due to default in payment of the debt Basements secured, the undersigned Substitute Trustee will offer Driveways for sale at public auction in Parking Lots front of the Courthouse for the Circuit Court of Halifax County, Virginia, on the 6th day of August, 2019, at 10:45 a.m., the following described real estate known as 1052 1st St., South Boston, Virginia 24592, situated in the County of Halifax, Virginia: All that certain lot or parcel of land located and being in Black Walnut District, Halifax County, Virginia, in the Village of Riverdale, and more particularly described as follows: Commencing at an iron pipe at the corner of Lots 314 and 320 as per plat of survey of Riverdale Park, of record in the Clerk's Office of Halifax County, Virginia, in Plat Book 1, at Page 18 1/2; thence along the southern end of Lots 320 and 341, inclusive, N, 86 degrees 3' E. 546.76 feet to middle of a branch; thence

FRIDAY, AUGUST 2, 2019 B7

»TO PLACE AN AD: CALL (434) 572-3945, COME BY OUR OFFICE AT 3201 HALIFAX ROAD IN SOUTH BOSTON OR CLICK YOURGV.COM



LEGALS

30' W. 33.12 feet to a point: all conditions, restrictions thence N. 88 degrees 30' W. reservations and easeat the southeast corner of now applicable thereto.

413.91 feet to an iron pipe ments, if any of record and (434)845-5285. 7-19-3c

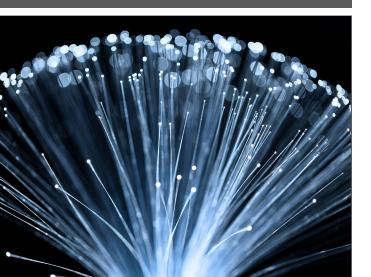




HOW FAST WILL THE INTERNET SERVICE OFFERED BY EMPOWER BROADBAND REALLY BE?

• • • • • • • • • • • • •

- The basic package will offer 50
 Mbps download / 50 Mbps upload.
- Speeds will provide simultaneous video to at least five separate devices with no buffering.
- A four-minute song can be downloaded in 6/10's of a second.
- A 45-minute TV show can be downloaded in 30 seconds.
- For the most demanding user, EMPOWER Broadband's fiber will be capable of delivering speeds up to 1 Gig.



FTTP will provide the absolute fastest and most reliable communication medium for the next generation. In other communities, the deployment of fiber broadband has led to increased property values, fostered economic development and has had a marked impact on educational and training opportunities.



CONTACT US

+1 434-372-6244 EMPOWER@meckelec.org www.meckelec.org

11633 Hwy 92 W Chase City, VA 23924



HOME

What is FTTP?

EMPOWER Broadband, a wholly-owned subsidiary of Mecklenburg Electric Cooperative (MEC), will deploy fiber optic cable to homes and businesses; the connection from the fiber backbone to individual buildings is referred to as "Fiberto-the-Premises (FTTP)."

What is the EMPOWER Broadband pilot project?

MEC's EMPOWER Broadband pilot project will utilize \$2.6 million in Tobacco Region Revitalization Commission grant funds to deploy fiber to connect consumers within 1,000 feet of a 135-mile fiber backbone crossing portions of Brunswick , Charlotte, Greensville, Halifax, Mecklenburg, and Pittsylvania counties.

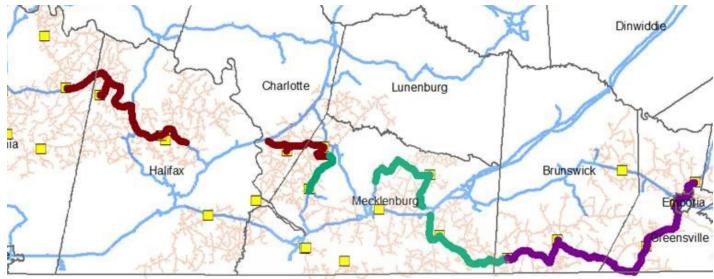
Will my home be within 1,000 feet of the backbone line?

We are currently engineering the exact route the backbone line will traverse; a map showing the most current proposed path is attached. Additional information will be forthcoming at www.meckelec.org.

When will EMPOWER Broadband be available to every MEC member?

The deployment schedule is largely dependent on the availability of funds. EMPOWER Broadband will continue to aggressively seek grant funds to extend services across the MEC system and beyond.

Proposed Backbone Route



Mecklenburg Electric Cooperative will deploy fiber optic cable across its system to connect its substations and district offices.

Why fiber as opposed to wireless or other technologies?

✓ An all-fiber network provides our communities with communications capabilities, educational and training opportunities, and economic development infrastructure resources that rival the best in the world and it can be upgraded without laying new fiber.

✓ Wireless internet solutions offer the advantage of quick deployment and a marginally lower cost; however, wireless is challenged in scalability, reliability, and security. Trees, buildings, and weather impact wireless service. Wireless internet can be compared to the reliability of your cell phone. Wireless may be good for mobility, but it does not offer competitive speeds or the unmatched reliability of wired connections.

✓ A fiber network provides the foundation for all wireless solutions.

When will construction begin and who will do the work?

Fiber construction has started from our central location in the Chase City Headquarters office to Highway 360. Lines will continue to be built both east and west. The installation of fiber directly connecting to homes and businesses will begin as early as August. The retail fiber deployment will be performed by contractors under the direction of MEC personnel. This method of deployment allows MEC crews to continue critical electric system construction and maintenance while also expediting the installation of FTTP.

How much will this service cost?

The 50 Mbps package will cost between \$65 and \$75 per month for a residential consumer, which also includes a WIFI enabled router. For less than \$100 per month, EMPOWER will also offer a bundle package to include home telephone service.

MORE THAN JUST INTERNET ACCESS A WORLD OF OPPORTUNITIES

- Telephone
- Television
- Education
- Gaming Security

Healthcare

May require additional subscriptions



COMING SOON!

Your home is along our FIBER route and will be eligible to receive EMPOWER's *super-fast* internet service! Watch your mailbox for more exciting details.

EMPOWER Broadband, Inc.

434-372-6244 ~ empowermec.net ~ empower@meckelec.org





Your Touchstone Energy" Partner 😥

DATE

ADDRESS

Dear Resident,

This letter is to inform you that Mecklenburg Electric Cooperative's (MEC) fiber optic cable network has been installed within 1,000 feet of your home and you are eligible to receive high-speed internet and phone service from EMPOWER Broadband. Now you too can watch that new show on Netflix that everyone is talking about, and your kids or grandkids can do homework over the internet!

For months we've been touting MEC's fiber "backbone" as we sought approval from the Virginia State Corporation Commission (SCC) for our EMPOWER Broadband Fiber-To-The-Home subsidiary! On January 30, 2019, we cleared the final hurdle as the SCC granted the needed approvals.

GOOD NEWS!

For years, Mecklenburg Electric Cooperative has built and maintained its own complex communications network... our expertise is second to none! We'll use that expertise to build a robust fiber optic network to accommodate the growing need to transfer data between substations and offices. That need will be met through the deployment of fiber optic cable. This fiber "backbone" offers a great opportunity for those who live within 1,000 feet of the backbone to receive ultra-high-speed fiber broadband.

THE BEST NEWS!!

The days of settling for slow internet are over! You asked, and we listened. EMPOWER Broadband, a subsidiary of MEC, will bring you -- not just fast -- but THE FASTEST and most reliable internet available anywhere with the same great customer service you have come to expect from your electric cooperative!

Go Ahead...Get EXCITED!

Let's get started! Sign and return the attached 2-year Residential Service Contract for broadband internet by April 12 and we'll begin designing the fiber connection to your home. Act now and receive a limited-time offer for free installation! Bundle internet with a 2-year home telephone service contract and we'll waive the \$100 broadband installation and the \$30 phone activation fees.

Choose EMPOWER Broadband as your service provider today... it's backed by a team you know and trust and who has served Southside Virginia capably and responsibly since 1938. With residential speeds starting at 50 Megabits per second and **unlimited** data usage for \$69.95 a month, you don't have to settle for less anymore!

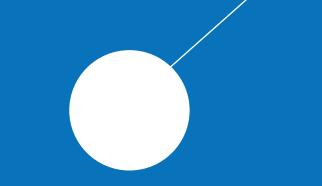
Sincerely,

Darok Land_

David Lipscomb VP Member & Energy Services



EMPOWER Broadband, Inc. 434-372-6244 ~ empowermec.net ~ empower@meckelec.org



Sorry We Missed You!



BROADBAND Powered by MEC

High-Speed Fiber Internet is Available to You

LIMITED TIME FOR SPECIAL DISCOUNTS

COMPLETE THE RESIDENTIAL SERVICE CONTRACT FOR INTERNET SERVICE BY APRIL 15

SAVE \$50 ON INSTALLATION

OR

BUNDLE INTERNET AND HOME-PHONE SERVICE BY APRIL 15

SAVE \$100 ON FREE INSTALLATION

434-372-6244 www.empowermec.net

YOU ARE INVITED

Want to learn more about how EMPOWER can help you ACCESS THE WORLD?

Come by our office on Wednesday, April 10 anytime between 3:00 p.m. – 7:00 p.m. for refreshments and a quick demonstration on how 50 Mbps can open up a world of opportunity for you and your family and SAVE YOU MONEY!

> Mecklenburg Electric Cooperative 11633 Hwy 92 Chase City, VA 23924

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Next-Generation PON: Eliminating physical constraints from the access network

ABSTRACT

In response to the voracious consumer demand for bandwidth, twonew nextgeneration passive optical network (PON) technologies have been standardized and are ready for deployment: XGS-PON and NG-PON2.

Like previous PON technologies, both transmit data through fiber-optic cables, offering very high-capacity connections to multiple subscribers. Intentionally designed to use different wavelengths than GPON, XGS-PON and NG-PON2 can co-exist on the same fiber, allowing for the re-use of many portions of the optical distribution network (ODN).

XGS-PON is the most recent standard (ITU G.9807.1) and can deliver up to 10 Gbps) of symmetrical bandwidth.ING-PON2 (ITU-T G.989) utilizes multiple wavelengths and can deliver 40 Gbps — with 80 Gbps possible in the future — on a single fiber.

MEET THE NEW PONS; THEY'RE NOT THE SAME AS THE OLD PONS

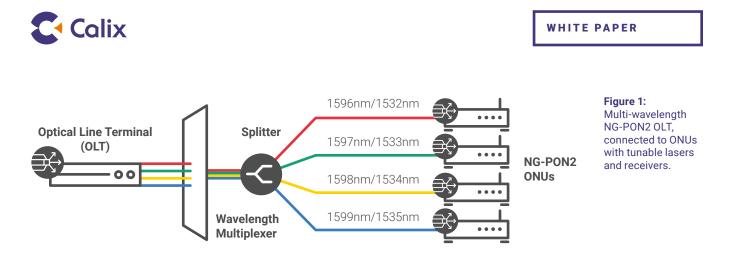
As we look toward 2020, one thing is clear: bandwidth demands will grow at a faster pace than ever before. Market forecasts predict that, within three years, the number of global Internet users will surpass 4 billion. There will be more than 26 billion networked devices and connections; an average of 3.4 for each person on the planet. Further, it is projected that these devices will be used primarily for watching video content, which will account for 82 percent of all Internet Protocol (IP) traffic by 2020, generating nearly three times the volume of traffic transported in 2015.¹

In response, much progress has been made in the standardization of next-generation passive optical network (PON) standards as communications service providers (CSPs) look to move from Gigabit to 10G services. Developed as successors to Gigabit PON (GPON) — which has been lighting up the world's optical access networks with 2.5 Gbps downstream and 1.25 Gbps upstream for the past decade — the two most recent 10G PON standards are XGS-PON (ITU G.9807.1) and NG-PON2 (ITU-T G.989).

Like previous PON technologies, both transmit data through fiber-optic cables, offering very high-capacity connections to multiple subscribers. Intentionally designed to use different wavelengths than GPON, XGS-PON and NG-PON2 can co-exist on the same fiber, allowing for the re-use of many portions of the optical distribution network (ODN).

¹Cisco Visual Networking Index (VNI) Forecast and Methodology, 2015-2020; June 2016; http://www.cisco.com/c/en/us/ solutions/collateral/service-provider/visual-networking-index-vni/complete-white-paper-c11-481360.html WHITE PAPER

As we look toward 2020, one thing is clear: bandwidth demands will grow at a faster pace than ever before.



As the voracious consumer appetite for bandwidth continues to grow, the ability to deliver 10 Gbps to individual businesses and households will be paramount for CSPs to deliver the subscriber experience and services required to compete – and win.

FOREVER CHANGING THE ACCESS NETWORK

With either XGS-PON and NG-PON2, CSPs now have technology options that provide more than just significantly enhanced speed. Both technologies offer extensive improvements over previous generations of PON that make them ideal for delivering new advanced services to multi-dwelling units (MDUs), delivering mission-critical business applications, and readying the network for 5G mobile technologies. Their most valuable application, however, may be as a catalyst to access network transformation.

Both XGS-PON and NG-PON2 are being deployed in 2017.

The key difference between the two technologies is the multiple wavelengths supported on NG-PON2 — which can provide some very exciting benefits to CSPs, including the elimination of all remaining physical constraints within the access network.

NG-PON2: USING FOUR WAVELENGTHS TO STAY AHEAD OF THE CURVE

The first of the two next-generation PON standards, NG-PON2 allows for the convergence of multiple services networks onto a single ODN, resulting in significant total cost of ownership (TCO) reduction, while enabling the introduction of new, efficient architectures that are highly tuned to meet emerging subscriber demands.

GPON transmits data using a single wavelength on each fiber. NG-PON2 utilizes time and wavelength division multiplexing (TWDM) and supports a minimum of four wavelengths on each fiber, making it the industry's first multi-wavelength access standard. Each wavelength within a single fiber can deliver 10 Gbps symmetrical speed (upstream and downstream). When four wavelengths are combined, throughput can reach 40 Gbps and, in the future, it will be possible to combine eight wavelengths to deliver 80 Gbps. For this reason, NG-PON2 is often referred to 40G (or 80G) PON. With the ability to deliver 10 Gbps (and beyond) to an individual subscriber, new business opportunities are possible, including:

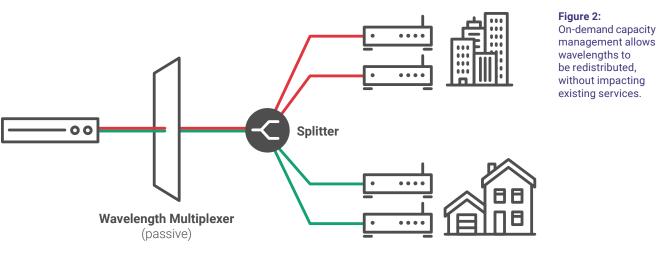
- MDUs and mission-critical business services: Many existing structures lack in-building fiber optic cabling. When it is not possible to run fiber to each individual unit, existing 'last mile' technology like G.fast over copper is used to deliver connectivity. With the continued growth in MDU populations, and as the capacity of copper continues to increase, it becomes increasingly important to have a technology like NG-PON2 to deliver 10 Gbps to the building demarcation point. With the use of channel bonding, throughput can be increased to 40 Gbps and 80 Gbps in the future.
- G mobile backhaul: As the industry continues its rapid movement toward 5G cellular technology, wireless data rates may reach as high as 10 Gbps. To backhaul traffic from the mobile base station, connections exceeding 10 Gbps will be required. With NG-PON2, as the demand for bandwidth to a mobile base station increases, adding capacity is simply a matter of utilizing another wavelength over the existing fiber to the tower.

In addition to increased capacity, NG-PON2 has three advantages over other PON technologies.

- On-demand capacity management enables new service delivery opportunities and load balancing improvements.
- Multiple wavelengths can be used to manage PON capacity. As utilization grows, PON capacity can be easily redistributed, with new channels turned on and optical network units (ONUs) switched over to different wavelengths, without impacting the delivery of existing services.
- Support of 8 point-to-point overlay wavelengths that can be used for dedicated services such as enterprise businesses, fronthaul, etc.

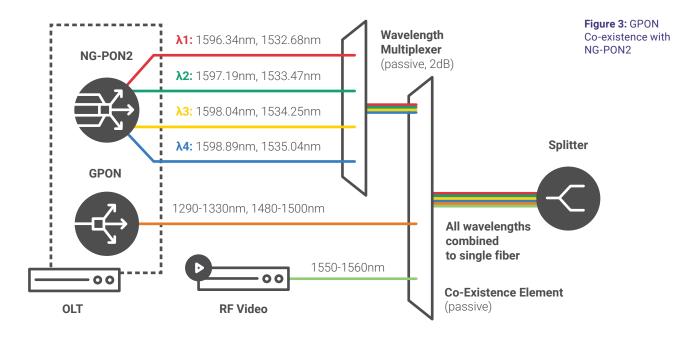
These changes can be done instantly, shifting and allocating capacity on demand, enabling new time-of-day services and maintaining load balancing. Physical resources within the access network will be able to meet the dynamic needs of subscribers, without human intervention.





When migrating from GPON to NG-PON2, there are two primary investments that need to be made:

- 1. New ONUs with tunable lasers (that can be programmed to different channels, or wavelengths), filters and receivers are required to support compliant wavelength plans. Some existing ONUs are already equipped with tunable lasers, as well as filters that allow for the co-existence of GPON and NG-PON2.
- 2. New OLT line cards are required to support compliant wavelength plans (as with the ONUs). In some cases, new OLTs are also required to ensure non-blocking support of NG-PON2 and to enable the desired density in the central office (CO).



With the use of NG-PON2 technology, and the ability to converge the services networks onto a single ODN, there is a significant TCO reduction.

XGS-PON: BRIDGING THE GAP BETWEEN GPON AND NG-PON2

XGS-PON (X=10, G=Gigabit, S=symmetrical) is the most recent standard and is very similar to existing GPON technology, except that it can deliver up to 10 Gbps of symmetrical bandwidth. It is considered to be a simplified version of NG-PON2, because the technology uses a fixed wavelength, meaning that it cannot harness multiple wavelengths in a single fiber to deliver more than 10 Gbps.

For some CSPs, XGS-PON will bridge the gap from GPON, providing a temporary solution, with NG-PON2 being the ultimate goal of virtually every global CSP. Because XGS-PON uses wavelengths outside of the spectrum allocated to NG-PON2 or GPON, the three technologies can co-exist on the same fiber. This allows CSPs to deploy XGS-PON to offer 10 Gbps services quickly, immediately capturing 10 Gbps service opportunities. NG-PON2 can be introduced later, without a forklift upgrade to the network and without disrupting existing XGS-PON or GPON services. Alternatively, NG-PON2 can be introduced wavelength by wavelength, allowing for a gradual investment strategy that is linked to customer demand. The Calix AXOS E7-2 Modular Access System supports the deployment of both XGS-PON and NG-PON2 in a single line card.

An overview of the two standards is shown in Table 1.

STANDARD	NG-PON2	XGS-PON
Standard Approved	June 2015	February 2016
PON Wavelengths	Up to 8 down, 8 up	1 down, 1 up
P2P Wavelenghts	Up to 8 down, 8 up	None
Bandwidths	10G/10G 10G/2.5G	10G/10G 10G/2.5G (XG-PON1)

Table 1: Next-generation ITU PON standards, comparing NG-PON2 with XGS-PON

TRANSFORMING ACCESS NETWORKS FOR THE NEXT GENERATION

NG-PON2 is gaining momentum around the world. To date, NG-PON2 has been deployed in a live network by Northpower Fibre (New Zealand) and Pilot in Manhattan using the Calix AXOS E7-2 Intelligent Modular System and in advanced testing with Verizon who has indicated intent to deploy NG-PON2 in 2017. All Calix solutions support both XGS-PON and NG-PON2 with the simple change of the optical transceiver, therefore service providers have the opportunity to choose the technology that is right for them at the time they are ready to deploy.

While there are varying rates of adoption between XGS-PON and NG-PON2, NG-PON2 technology is key to the transformation of the access network. With the use of NG-PON2 technology, and the ability to converge the services networks onto a single ODN, there is a significant TCO reduction. Add to NG-PON2 new access network architectures like Central Office Re-defined as the Datacenter (CORD), Software Defined Networking (SDN) and, more specifically for the access network, Software Defined Access (SDA) with Network Functions Virtualization (NFV) and CSPs will have transformed their access network to not only reduce their TCO but also meet the needs of the ever more demanding subscriber.