

**REQUESTS FOR SPECIAL TEMPORARY AUTHORITY (STA)**  
**FOR FIVE LPTV/TV TRANSLATOR STATIONS**

Arkansas PBS  
Public Television for the State of Arkansas

The Arkansas Educational Television Commission (AETC) is a state entity with the mission to enrich and empower all Arkansans with compelling and relevant programming and statewide services that educate, inform, engage and inspire, through innovative and efficient use of public and private resources. AETC is the licensee of a network of six (6) noncommercial educational (PBS member) TV broadcast stations that comprise Arkansas PBS. The public TV stations are: KETS (Little Rock), KAFT (Fayetteville), KETJ (Jonesboro), KETG (Arkadelphia), KETZ (El Dorado) and KEMV (Mountain View). [See attached map of existing coverage.]

These public TV stations deliver critical educational and informational content to roughly 76% of the population of Arkansas. The lack of universal coverage presents a dangerous public interest and public benefit gap in this time of the COVID-19 pandemic where exigent educational services, essential health information and emergency preparedness are vital public needs.

Because of the unique and extraordinary emergency situation need created by COVID-19, AETC seeks to expand its statewide coverage to enable AETC's broadcast services to reach a large unserved population of Arkansas and provide access to vital educational services for K-8 students, daily Covid-19 health updates delivered by the State of Arkansas, timely local public affairs content and critical public safety alerts that form the backbone of the state's early warning system. AETC requests Special Temporary Authority (STA) to operate five (5) new LPTV/TV Translator Stations that will broadcast the AETC content and serve these unserved (and largely rural) areas.

The Governor and the Legislature of the State of Arkansas have deemed AETC broadcast service to these areas to be a very important state need and have allocated \$5.18 million from CARES federal funding to expand the broadcast reach of Arkansas PBS to these areas. The federal funding comes from the 2020 CARES ACT, which also stipulates these funds must be spent by December 30, 2020. This timing further illustrates the emergency nature and urgency of our request.

**BACKGROUND ON COVID-19 EMERGENCY SITUATION**

Arkansas PBS is a long-standing, trusted public TV broadcaster serving audiences in the State of Arkansas with noncommercial educational TV programming. The Arkansas Educational Television Commission was created in 1961 and has been broadcasting in Arkansas since 1967. The network currently includes 6 FCC licensed transmitter sites in the state of Arkansas that are connected and relayed by 12 microwave sites.

When the COVID-19 outbreak caused the closure of all K-12 schools in Arkansas on March 15, 2020, Arkansas PBS immediately shifted focus to the services that could best serve the public. In mid-March, Arkansas PBS formed a close collaborative partnership with the Arkansas Department of Education's Division of Elementary and Secondary Education (DESE) to create "Arkansas AMI" (Alternative Methods of Instruction) to keep students learning from home. The emergency educational initiative launched on Monday March 30, 2020; combining the skills of some of Arkansas' most talented and acclaimed teachers with curriculum supporting programs from PBS Kids, America's most trusted programming for children.

Arkansas PBS produced and broadcast the standards-based AMI programming for the state's pre-K through 8th grade students, for eight weeks. 5 hours a day, 5 days a week; becoming the state's defacto "schoolhouse" and keeping students engaged in learning until the end of the school year; reaching students, teachers and families statewide, over the air when their communities needed that access the most.

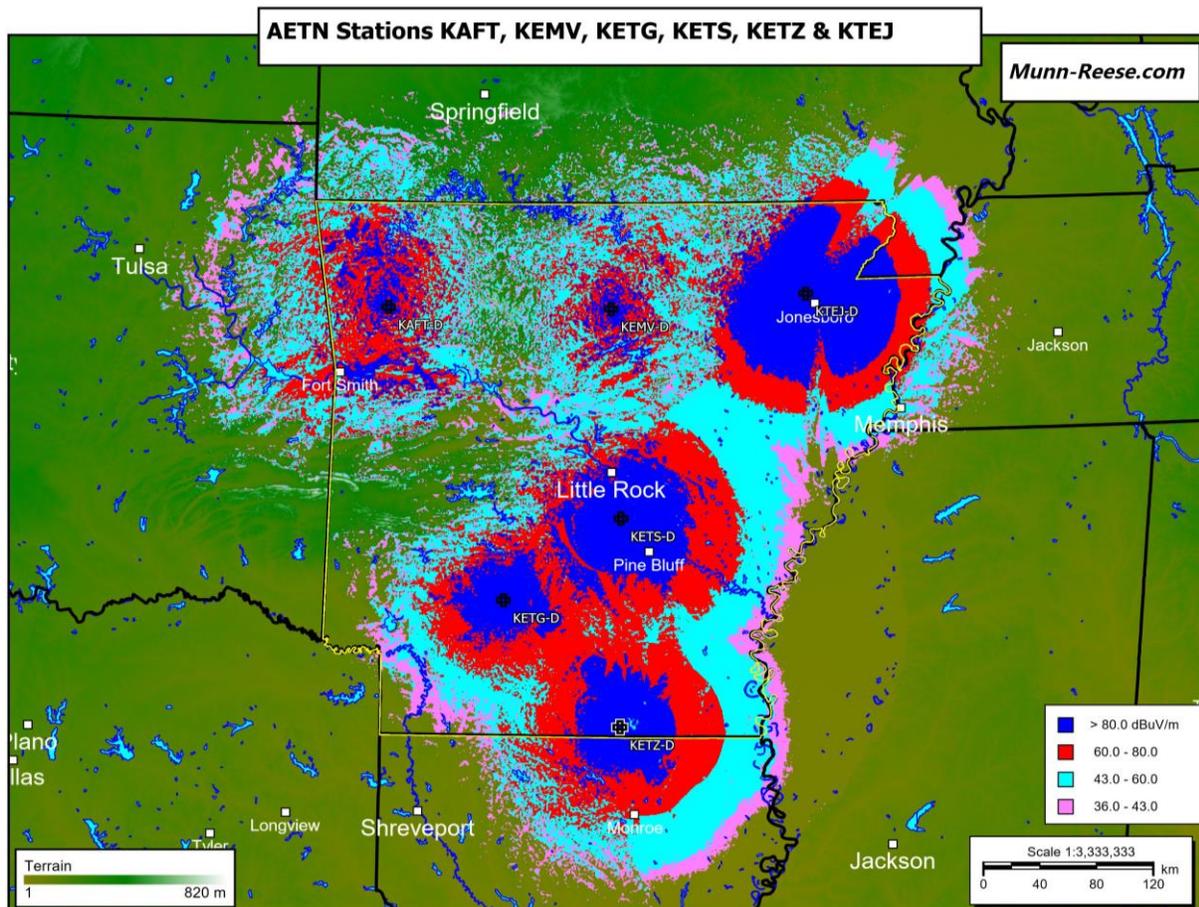
In addition, Arkansas PBS continued to broadcast PBS Kids 24/7 on one of its digital subchannels (and continues to do so). The programs on PBS Kids, our main channel AR PBS and Arkansas AMI, many of them used in Ready to Learn, have always been a trusted and highly utilized resource that families often refer to as "*Arkansas' Preschool*" because they prepare our youngest Pre-K citizens to embark on a successful path in school; and because preschool is a luxury many of them cannot afford.

In many areas of the state our broadcast was the only educational resource pre-K through 8<sup>th</sup> grade children were able to receive. Many facilities did not (and still do not) have internet service due to limited broadband service. As of June 19, 2020, Arkansas ranked 41<sup>st</sup> in the nation for broadband access. Also, access to high speed internet speeds at affordable prices is not equally available in the state. Only 53% of Arkansas residents have access to a "low-priced" internet plan of \$60 or less per month. This results in a large number of residents that simply cannot afford internet at home. That same affordability issue impacts the many rural and poor citizens in Arkansas who cannot afford cable television or a satellite service provider, so they rely on AETC's free, over-the-air (OTA) signal.

But, regrettably, a large percentage of Arkansas families could not access this educational content because our existing transmission sites do not cover at all (or do not cover well) all portions of the State of Arkansas. AETC began to hear from teachers, students, state legislators and parents concerned they could not receive our Arkansas AMI broadcasts. This gap in broadcast reception (approximately 24% of the population) and broadcast OTA access forms the need and the basis for this STA request.

## **BACKGROUND ON TRANSMISSION GAPS**

In 2019, Arkansas PBS undertook a survey to determine its actual OTA digital broadcast coverage in Arkansas. The survey utilized the "as built" transmitter performance measurements, measured antenna pattern and elevation data from all six broadcast sites and imposed the receive signal on a real-world topographic map of the region to provide an extremely accurate model of the full network coverage. [See map of existing AETC coverage]



The COLORS in the coverage map show the current coverage, and areas of opportunity:

- **DARK BLUE** represents the strongest signal coverage areas
- **RED** represents the next band of coverage; acceptable for most homes
- **LIGHT BLUE** provides coverage, though the signal is weaker and may be spotty
- **PINK** represents the fringe regions of poor or unreliable signal reception
- **GREEN** regions are areas with no signal reception at all

Using population counts from the 2010 Census (soon to be updated), the potential estimated overall broadcast population within the State of Arkansas is 2,942,488. The survey found that the Arkansas PBS broadcast network reaches an audience of 2,242,973 with a reliable OTA signal (**76%**). Unfortunately, 422,336 Arkansas citizens are left with poor or unreliable OTA signal coverage (**14%**) while 260,121 have **no OTA reception at all (9%)**.

**A total audience of 682,457 persons (24% of the State), many of whom reside in rural counties of the State and most need free OTA public and educational TV service, cannot effectively receive a signal from Arkansas PBS at this time.**

## **PLAN TO IMPROVE COVERAGE WITH STA FACILITIES**

The coverage map helped us identify FOUR (4) significant areas of the State of Arkansas with no broadcast signal coverage and deficient coverage areas. They are identified and referred to from here on as follows:

**Area 1/Gaither** (The Northern Valley Region of Harrison and Mountain Home)

**Area 2/Ouachita Mountains** (The Arkansas River Valley)

**Area 3/Forrest City** (The plains extending to West Memphis)

**Area 4/Yancy** (The southwest corner of Arkansas)

AETC requests the FCC grant STAs to allow AETC to stand up five (5) LPTV/TV Translators in those identified areas to rectify these transmission gaps during the emergency situation created by the Covid-19 pandemic.

The need for this expanded, temporary OTA coverage is most glaring when it comes to critical Arkansas mandated educational programming like AMI for the children and families of the State, State Health Department COVID-19 updates, Arkansas Public Affairs programming and Arkansas-specific Emergency Alerts such as tornado warning during this time of COVID-19.

It is worth noting that AETC intends to leverage existing state-owned towers and site infrastructure to reduce time to commence service, contain costs and to expedite the establishment of these five (5) new LPTV/TV Translator transmitter sites to fill in the areas of no (and poor) reception. AETC has identified five (5) existing state-owned towers and conducted structural surveys to prepare for the installation of facilities that will provide adequate coverage to those four (4) regions. AETC commissioned communications consulting engineering firm Munn Reese to design the facilities and prepare the technical information.

As part of that engineering process, Munn Reese has identified two gap areas that will require power levels above the 3kw limits in order to reach the citizens that need it most. The sites that require Experimental STAs to optimize coverage are Area 3/Forrest City and Area 4/Yancy and we are requesting over-power waivers to serve those areas.

We believe there are strong reasons in support of the waivers. Staying within the 3kw limit reduces coverage below what is needed to reach the maximum population in those gap areas with adequate signals. Doing so would necessitate more sites to fill in the gaps, which in turn would require additional towers, antennas, transmitters and microwave paths to link programming out to them. This creates an additional financial burden for the project and increases the complexity and time required to stand up the signals.

First we will discuss the locations that do serve the gap areas with power levels at or below the LPTV 3kW limit: Area 1/Gaither and Area 2/Ouachita Mountains (transmitting from towers at Russellville and Buck Knob-Mena) can adequately service the coverage gaps within their regions with power levels at or below the LPTV 3kW limit because they have the advantage of terrain elevation above 900ft AMSL at all three locations.

However, the remaining two sites, Area 3/Forrest City and Area 4/Yancy are at the lowest elevations and there are no other available state towers in those two areas that provide higher elevations. These two areas also represent the largest gap areas that need to be filled. Per the studies conducted by our engineering consultant Munn-Reese, the interference free coverage for Area 3/Forest City shows the population served at the 3 kW LPTV limit as 76,066. Increasing the power to 17.5 kW raises the interference free population coverage to 183,345 which represents a 141% increase.

At Area 4/Yancy, the population coverage operating at the 3 kW LPTV limit is only 88,459. Increasing the power to 12 kW raises the interference free population coverage to 175,242, a 98.1% increase.

The increase in power above the LPTV limit is necessary within these two regions to provide the required coverage without having to build additional sites and infrastructure and stay within our Cares Act grant funding limits. We are attempting to get these gaps filled expediently to support the educational need brought about by the Covid-19 crisis. Adding more sites and complexity to the network will only serve to delay and put at risk the public benefit.

AETC requests that the FCC grant waivers to operate the proposed STA for Area 3/Forrest City at 17.5 kW ERP and Area 4/Yancy at 12kW ERP above the 3kW LPTV limit to maximize the coverage and audience reach in these regions. Being able to service these two regions with one higher power transmitter site will alleviate the need to establish multiple 3kw LPTV sites to provide the necessary coverage and reduces infrastructure costs such as microwave paths, transmitters and broadcast antenna systems to stay within our available Cares Act Grant funding.

We have provided supporting Exhibits created by Munn Reese that further demonstrate the benefits of this approach. They are found in the Appendix at the end of this document.

**Exhibit #1** shows the service contour comparison between 3kW LPTV and maximized ERP for both Yancy and Forrest City, demonstrating the increase in coverage and ability for the higher power services to better fill the gaps in these regions from a single transmitter location.

**Exhibit #2** provides interference free coverage determination for Forrest City at 3kW.

**Exhibit #3** provides the coverage determination for Forrest City at 17.5kW ERP maximized at Forrest City.

**Exhibit #4** provides the interference free coverage determination for Yancy at 3kW LPTV.

**Exhibit #5** provides the interference free coverage determination for Yancy at 12kW ERP maximized.

AETC believes the supporting engineering documentation helps to demonstrate the valid use of deploying maximized services at Area 3/Forrest City and Area 4/Yancy over 3kW LPTV power limited services at these two sites and request that the FCC approve these two STA applications with waivers to operate at maximized power.

## **PUBLIC INTEREST BENEFITS**

The public interest benefits from granting these four STAs are a dramatic expansion of service and population coverage to serve vital Arkansas educational and emergency services during this time of COVID-19:

**Area 1/Gaither** - We have identified a state-owned tower on the mountain ridge above Gaither to cover Area 1, the Northern Valley Region of Harrison and Mountain Home extending from the Ozark National Forrest North to the Missouri State Line

- It would reach an underserved population of **151,055 people** which would result in a coverage increase of **5.1%**
- Counties that will experience new or enhanced over-the air broadcast coverage of Arkansas PBS include Boone, Carroll, Marrion, Newton, and Searcy. These counties have a combined average poverty rate of **20.24%**

**Area 2/Ouachita Mountains** – This area requires two LPTV transmitter locations. We have identified a tower location at Buck Knob–Mena and another at Lee Mountain–Russellville to cover Area 2, the Arkansas River Valley area extending West through the Ouachita National Forrest to the Oklahoma State Line.

- Buck Knob – Mena would reach **174,069** people which is a coverage increase of **5.9%**
- Lee Mountain – Russellville would reach **124,289** people which is a coverage increase of **4.2%**
- Combined that is an addition of **289,358** people in the region, an increase of **10.1%**
- Counties that will experience new or enhanced over-the air broadcast coverage of Arkansas PBS include Conway, Franklin, Garland, Johnson, Logan, Montgomery, Perry, Polk, Pope, Scott, Sebastian and Yell. These counties have a combined average poverty rate of **20.50%**

**Area 3/Forrest City** - There is an available state tower at Forrest City on Crowley's Ridge that will cover Area 3 across the plains the plains extending from Forrest City East through to West Memphis and the Tennessee State Line.

- It would reach **116,517 people** which is an increase of **4.0%**
- Counties that will experience new or enhanced over-the air broadcast coverage of Arkansas PBS include Crittenden, Cross, Lee, Monroe, Phillips, St. Francis and Woodruff. These counties have a combined average poverty rate of **22.46%**

**Area 4/Yancy** - A state tower has been identified at Yancy to cover Area 4, the Southwest corner of Arkansas extending from Mena through Hope to Magnolia and including Texarkana.

- It would add **119,677 people** for a coverage increase of **4.1%**
- Counties that will experience new or enhanced over-the air broadcast coverage of Arkansas PBS include Hempstead, Howard, Lafayette, Little River, Miller, Nevada, Polk and Sevier. These counties have a combined average poverty rate of **23.78%**

Based on the population counts from 2010 the five (5) new sites would deliver:

- **A net increase of approximately 685,607 people**
- **A 23.3% increase in reliable coverage**

With the addition of the four new transmitter locations, the Arkansas PBS potential broadcast audience coverage with reliable over-the-air signal would increase to 2,928, 580 which equates to 99.5 of the state; universal coverage. <sup>1</sup>

With expanded service comes the expanded public benefits discussed above. Nearly 600-thousand Arkansans will get new essential benefits during these unpredictable and unsettling times of crisis. Nearly 600-thousand Arkansans, many of whom have no access to or cannot afford broadband, cable or satellite services will get FREE over-the-air broadcasts to safely navigate the COVID-19 pandemic:

- Educational content and services for their school age children so they can keep learning and progressing during a disrupted school year
- Daily Covid-19 Health updates from the Governor and the Arkansas Department of Health on the latest ways to stay safe from the pandemic
- Critical emergency weather alerts when a storm or tornado threatens their homes and their lives
- Arkansas-specific public affairs programming that informs and affects their civic lives as citizens of the state

- The lifelong learning that is fostered by public television programming that that informs and educates

## **CONCLUSION**

For all these reasons, AETC respectfully asks that the FCC grant the five (5) Special Temporary Authorizations (STAs) to serve the public interest, convenience and necessity. The new signals will deliver potentially lifesaving, life changing, and life affirming services to a large, unserved population in Arkansas; many in rural and impoverished areas that need it the most.

As discussed above, the Arkansas CARES Act Committee has already allocated \$5.2 million for Arkansas PBS to expand its broadcast reach in this manner as long as AETC can obtain the STAs and quickly stand up the new broadcast facilities and enable transmission with all funds spent by December 30, 2020. This extraordinary opportunity represents a unique moment-in-time when a critical public need aligns with available public resources to serve the greater good – AETC asks that the FCC do its part to help us meet that moment.

AETC makes this request so that it may serve all the people of Arkansas during this time of crisis.

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<sup>i</sup> Only approximately 0.5% of the state would be left with unreliable service, primarily due to mountainous areas where terrain is the limiting factor for OTA broadcast service.