

**Corporation for Public Broadcasting
Appropriation Request and Justification
FY 2024**

*Submitted to the Homeland Security Subcommittee of the House Appropriations Committee
and
the Homeland Security Subcommittee of the Senate Appropriations Committee*

March 13, 2023

This document with links to relevant public broadcasting sites is available on our Website at:

www.cpb.org

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Overview of Public Media

Since the 1920s, people across the United States have launched broadcasting services in their communities to champion the principles of diversity and excellence of programming, responsiveness to local communities, and service to all.

Today's public media system reaches nearly 99 percent of the U.S. population over-the-air with free educational, news and public affairs programming and public safety services. Public media utilizes broadcast and digital platforms to provide essential public services to rural and urban communities.

The Corporation for Public Broadcasting (CPB) supports 391 grantees, representing 1,207 public radio stations and 158 grantees representing 357 public television stations. These independently operated noncommercial, non-profit local public television and radio stations are each licensed by the Federal Communications Commission and overseen by a local governing body.

Public media creates and distributes content that is by, for, and about Americans of all backgrounds, and its service fosters dialogue between and among the American people. In addition to the critical local journalism that provides information to help communities respond to and recover from natural and humanmade disasters, public media stations provide essential public safety and emergency alert services that help prepare and protect vulnerable communities. In a world where there are numerous outlets for information, public media continues to be America's most trusted and reliable institution for news and educational programming.

Public television and radio stations have long played an integral role in our nation's emergency alert system, and the partnership between PBS, NPR and local stations provides unsurpassed resilience for our nation's public safety systems. With a national-local structure, public media entities can distribute national, state, and regional emergency alerts, and provide encrypted, geo-targeted alerts to local communities in times of need.

Public broadcast telecommunications infrastructure is the nation's broadest communications platform. Its universal access is an essential lifeline to news and public affairs, community resources, critical health and public safety information, and the education needs of our nation's children.

Department of Homeland Security Next Generation Warning System (NGWS) Funding Request

CPB Supports a \$56 million request for the Next Generation Warning System (NGWS) in FY 2024

The Corporation for Public Broadcasting (CPB) is grateful for Congress' FY 2023 support of \$56 million for the Next Generation Warning System (NGWS). These funds are critical in helping CPB-qualified community service grant (CSG) public media stations replace and harden their communications infrastructure.

Today, we join the public broadcasting community in supporting a continued \$56 million appropriation in FY 2024 for the Next Generation Warning System (NGWS) within the U.S. Department of Homeland Security's FEMA Federal Assistance Grants account. As part of the Integrated Public Alert and Warning System (IPAWS), this competitive grant program will utilize public broadcasting to enable the expansion of alert, warning, and interoperable communications, and the incorporation of emerging technology in those activities, consistent with the recommendations in the *Modernizing the Nation's Public Alert and Warning System* report from the FEMA National Advisory Council, February 15, 2019.

NGWS would allow for CPB-qualified community service grant recipients to procure, construct, and improve transmission and other public safety-related equipment, software, and services, including ATSC 3.0 and comparable digital broadcast technology for radio stations. This will result in enhanced alerting and warning capabilities that serve all Americans.

NGWS Grant Program Update

On September 23, 2022, FEMA awarded CPB \$40 million in FY 2022 funding to create and implement the Next Generation Warning System grant program to CPB-qualified grantees.

FEMA designed the NGWS grant program to incorporate emerging technology for the expansion of alert, warning, and interoperable communications among CPB-qualified public broadcasting stations. In responding to FEMA's Notice of Funding Opportunity (NOFO), CPB articulated its strategy to meet Congress' intent for equipment funding for stations and FEMA's priorities—funding for small, rural, and minority stations—and established a timeline for hiring personnel, opening the grant for applications, and making awards. CPB's response was informed by its FY 2022 Homeland Security Congressional Budget Justification, its consultation with the public media system in spring 2022, and conversations with FEMA during the summer of 2022. In administering this grant, CPB, like Congress and FEMA, will focus on the grant's "outcomes" not "outputs."

The NGWS grant program will enable a more resilient and secure public alerting system, delivered through our nation's public media stations. Specifically, the grant funds will:

- Enhance capacity of local broadcast stations to receive, broadcast, and redistribute emergency alert messages using the IPAWS Common Alerting Protocol (CAP) specifications;

- Upgrade stations’ transmission equipment to next-generation ATSC 3.0 broadcast standards;
- Enhance technology infrastructure to enable new, enhanced broadcast services that improve the distribution of public alerts and warnings and strengthen infrastructure resilience with emergency generators and other equipment;
- Expand the delivery and distribution of emergency alert messages from IPAWS to fill gaps in alert and warning delivery in underserved areas; and,
- Enable the communication of alerts and warnings to individuals with disabilities, individuals with access and functional needs, and individuals with limited English proficiency.

CPB will achieve FEMA’s goals through grants to public television and radio stations for equipment and training that will enable upgrades to ATSC 3.0 broadcast technology for television stations and comparable digital broadcast technology for radio stations. A particular focus will be placed on outreach to communities with the greatest need, primarily in rural and Tribal areas.

Currently, CPB is hiring new staff positions solely dedicated to the NGWS grant program. The staffing positions of an Executive Director, Project Officers, and a Grants Compliance Officer follow the structure and strategy in place for CPB’s other federal grant programs.

Further, based on previous experience working with public broadcasting television and radio stations as sub-grantees, CPB will contract with a third-party firm (or firms) for technical assistance with tasks such as the evaluation of equipment needs, equipment acquisition, and equipment distribution. The use of technical assistance will help ensure consistent standards for technology upgrades. It will also support television and radio stations that lack the resources to accurately determine the equipment and services needed and/or comply with federal acquisition requirements and other grant conditions. A similar approach was successfully used during public media’s conversion from analog to digital broadcasting.

CPB will also seek to contract with other providers to assist sub-grantees with their administration of the NGWS grant program. Services available to sub-grantees could include assistance with the application process, post-award compliance, and close-out. These additional resources are especially important for small, rural, and Tribal stations with limited experience and resources.

In addition, CPB will create an application for the grant funding. Our proposal to FEMA stated that station applications will be reviewed, scored, and prioritized using the criteria below:

Priority funding areas for NGWSGP		
Priority 1	Tribal/Minority /Rural stations	Age of equipment to be replaced/new equipment to serve resilience purpose
	serving underserved communities	Improved public safety/alerting service to be offered
		Dedicated project management at the station and timeline for completing work

	(TV and Radio)	Geographic area special risk factors (e.g., hurricane, tornado, wildfire, and predominant languages as a barrier)	
Priority 2	Small stations (TV and Radio)	Age of equipment to be replaced/new equipment to serve resilience purpose	Improved public safety/alerting service to be offered
			Dedicated project management at the station and timeline for completing work
		Geographic area special risk factors (e.g., hurricane, tornado, wildfire, and predominant languages as a barrier)	
Priority 3	Other TV and Radio Stations	Age of equipment to be replaced/new equipment to serve resilience purpose	Improved public safety/alerting service to be offered
		Dedicated project management at the station and timeline for completing work	
		Partnerships with local/regional/state emergency management officials	
		Geographic area special risk factors (e.g., hurricane, tornado, wildfire, and predominant languages as a barrier)	

CPB plans to open the portal to receive station grant applications in spring 2023. Eligible public television and radio stations will have 60 days to prepare and submit their applications through CPB’s grant management system.

System Infrastructure Needs

In 2017, CPB commissioned a comprehensive System Technology Assessment to better understand public television and radio stations’ technology challenges and needs. The station response rate was unprecedented (73 percent of radio and 92 percent of television licensees), cataloging more than 60,000 pieces of equipment throughout the system that need to be updated or replaced. This Assessment projected that the system’s financial capacity to address its equipment repair and replacement issues would total more than \$300 million by 2020.¹ While CPB does not have an updated system assessment, there is every reason to believe that the financial challenges that stations face in meeting their equipment needs have only grown. Over the past several years, stations have experienced equipment failure causing them to be off the air from several days to several weeks. During this time, critical public safety services are compromised.

The Assessment further found that 86 percent of TV stations and 75 percent of radio stations tend to postpone replacing their technology equipment when faced with a lack of funds. By postponing replacements, stations are at a greater risk of going off the air, not being able to fulfill their missions, and being forced to make purchases without having the lead time to negotiate better equipment deals. Almost half of TV stations and a quarter of radio stations stated that they scaled back their equipment replacement plans with less optimal specifications due to a lack of funding. As the public media system postpones replacing aging equipment beyond its end-of-life,

¹ CPB System Technology Assessment Final Report. Eagle Hill Consulting. May 21, 2017. http://www.cpb.org/files/reports/Final_Report-CPB_System_Technology_Assessment_2017.pdf

local stations face increased risk of technological failure, lost production and broadcast time that ultimately affects the educational, informational, and public safety services to their communities.

Without adequate resources to maintain and replace broadcast transmission infrastructure on schedule, TV and radio licensees of all sizes and types could face operating challenges nationwide, disrupting the essential public safety service these stations provide. The elimination of critical federal funding resources, including the Public Telecommunications Facilities Fund, more than a decade ago has contributed to the growing financial needs for licensees nationwide as aging infrastructure and natural disasters challenge the nation's public media networks. A \$56 million appropriation for the NGWS in FY 2024 would be another meaningful step in maintaining and replacing public media's transmission infrastructure.

Public Media's Role in Public Safety

Combined, public television and public radio stations reach nearly 99 percent of the American population. With this extensive reach, our national-local structure, and public service focused mission, Congress and first responders recognize public media stations as a critical component of our nation's public safety network. Since September 11, 2001, CPB has invested in building local station capacity to assist emergency service providers. Currently, in many states and local communities, public media stations' digital and broadcast infrastructure provide a backbone for emergency alert, public safety, first responder and homeland security communications services.

In 2006, Congress passed the WARN Act, which established a voluntary system that allows cellular phone companies to notify their subscribers of imminent threats to life or property. Pursuant to the Act and subsequent FCC rules, the PBS WARN program was initiated to enable all public television stations to send every geo-targeted Wireless Emergency Alert ("WEA") issued by over 1,600 federal, state, local, tribal, and territorial alerting authorities out over public television transmitters, providing a "hardened, redundant" alternate between FEMA and participating cellular carriers. Since 2013, public television has been an essential partner in FEMA's Integrated Public Alert and Warning System (IPAWS), helping to ensure that every alert reaches every person in harm's way. Public television stations are established lifesaving forces in their communities, even for people who might never turn on a television.

Between January 1, 2022, and January 1, 2023, nearly 9,000 WEAs were issued by state and local authorities and transmitted over the PBS WARN system throughout the country – a 27 percent increase over the same period last year, demonstrating the growing utility of this life-saving technology.

PBS WARN recently completed a total system overhaul to ensure compliance with the FCC's WEA Report and Order 16-127, which mandated improvements to the WEA system. This update enabled PBS WARN to continue to provide a reliable backup to the WEA system at the FCC's current specifications and also provided new, supported equipment to each public television licensee. These improvements will serve as a starting point for stations to expand their public safety footprint, and the NGWS grant program will leverage this existing infrastructure to enhance and expand public safety services, including situational awareness of alert dissemination for emergency managers.

In March 2016, the FCC’s Communications, Security, Reliability, and Interoperability Council’s (CSRIC) Working Group 2: “Emergency Alerting Platforms” acknowledged the importance of public broadcasting to alert dissemination, stating “PBS WARN is a safeguard to ensure delivery of the WEA, even in the event that a cybersecurity or other event disrupts the primary WEA delivery path.”²

In June 2018, the FCC’s CSRIC Working Group 2 issued a final report on “Comprehensive Re-imagining of Emergency Alerting.”³ Section 6.4 of the Report identifies three ways NextGen (ATSC 3.0), and specifically public television, can support and improve emergency alerting. Section 6.4 of the Report states:

“PBS and local public television stations play a crucial role in protecting communities by using datacasting to deliver essential information to individuals and first responders. These benefits are all made possible by public broadcasting stations’ unique reach, reliability, and role across America, and are especially vital in rural and underserved areas.”

The Report further states, “we believe that PBS stations and first responders can find even more ways to identify and utilize opportunities presented by ATSC 3.0.”

The February 15, 2019, report, *Modernizing the Nation’s Public Alert and Warning System* from the FEMA National Advisory Council, cements the importance of public broadcasting’s role in public safety and identifies a need for continued partnerships, recommending that FEMA encourage “use of public broadcast capabilities to expand alert, warning, and interoperable communications capabilities to fill gaps in rural and underserved areas.”⁴

The Public Radio Satellite System® (PRSS), managed by NPR, receives a national EAS feed directly from FEMA to send Presidential emergency alerts to local public radio stations, including NPR Member and non-member stations. NPR/PRSS is also named as a resource in at least 20 states’ emergency plans, according to the FCC.⁵ Many of the public radio stations in these twenty states serve as Primary Entry Point (PEP) stations. The PRSS network includes almost 400 interconnected stations, which serve 1,247 local public radio stations. This large national network supports secure, reliable communications during emergencies without relying on the Internet, which may be offline or unreliable.

During the past nine years, NPR/PRSS, with financial support from CPB, has been helping public radio stations implement MetaPub technology so they are capable of sending text and

² CSRIC VI, Working Group 2, Emergency Alerting Platforms: WEA Security Sub Final Report. March 2016. <https://www.fcc.gov/about-fcc/advisory-committees/communications-security-reliability-and-interoperability#block-menu-block-4>

³ CSRIC Final Report on “Comprehensive Re-imagining of Emergency Alerting.” June 2018. <https://www.fcc.gov/files/csric6wg29junereportcomppdf>

⁴Modernizing the Nation’s Public Alert and Warning System Report from the FEMA National Advisory Council, February 15, 2019. https://www.fema.gov/media-library-data/1550587427456-30d4179ee4fa8b97ecf4ab6bee76ace6/NAC_IPAWS_Subcommittee_Final_Report.pdf

⁵ <https://www.fcc.gov/public-safety-and-homeland-security/policy-and-licensing-division/alerting/general/state-eas-plans>

image metadata simultaneously with their live radio broadcasts.⁶ For example, the emergency alert information from state, regional and local emergency officials, such as tornado and hurricane warnings, evacuation routes, and COVID-19 information, can be heard and seen on mobile phones, HD radios, “connected car” smart dashboards, smart home speakers and other radio data system displays, and via online audio streaming. Today, approximately 10 percent of interconnected public radio stations have the capability to issue live text alerts using the MetaPub system in the event of a natural or humanmade disaster.



The first MetaPub alert for a non-weather event was issued by WVIK-FM, in Rock Island, Illinois. The station, which serves the Quad Cities area and is a licensee of Augustana College, alerted listeners and viewers to COVID-19 information.

In cooperation with the Rock Island County, Illinois, Emergency Management Agency (“EMA”), WVIK (pictured above) is the primary relay station for emergency information concerning the Exelon Quad Cities nuclear power generating station. In the event of an emergency at the nuclear plant, the county agency will contact station personnel, and the station will broadcast the EMA message.

Initial grants from CPB enabled MetaPub equipment to be installed at stations in California, in parts of the Midwest, including “Tornado Alley,” and in stations serving the Gulf Coast and southeastern United States. Funding for the Next Generation Warning System would provide all public radio stations with access to funds to install MetaPub, enabling them to issue and disseminate enhanced local and regional alerts specific to their communities. The installation for the remaining stations across the country would cost between \$9 million and \$12 million, or about \$20,000 per station.

⁶ Metadata is descriptive information about programming (it could be station identification, logo, program, air date, topic, host or reporter names, photos, graphics, maps and the format could be text, images, or links).



Hurricane test alert by Miami-based WLRN on car dashboard screen.

From a programming perspective, public radio stations keep their audiences informed continuously during disasters across broadcast and digital platforms. For example, when natural disasters fall short of triggering an EAS alert, public radio stations still provide local weather alerts, announcements from local officials, and information on where residents can access emergency services.⁷

In rural and remote areas, public media is often the only source of local news and public safety information, and Native-owned public media stations serve some of the most remote and least connected areas in the nation. These stations partner with the Tribal governments, local public safety officials, local health agencies, and Regional Bureau of Indian Affairs offices to distribute essential health and safety information. For example, KBRW-AM in Barrow, Alaska, is the only broadcast service available in an area of more than 90,000 square miles. The station airs programming and announcements, in English and Inupiat, from the Borough School District, health department and local hospital and police departments. Without stations' broadcast infrastructure, many Americans, especially those in rural areas without broadband coverage, would lack reliable access to lifesaving information and public safety alerts.

Public radio also requires funding to support the refurbishment and maintenance of state and regional public radio networks. Similar to the national interconnection system, each regional network is a critical communications link to rural, underserved communities across America – especially during emergencies.

[Eyes on IPAWS: Leveraging stations' existing PBS WARN infrastructure to provide situational awareness tools to emergency management](#)

⁷ NPR's comments to the Federal Communications Commission on "Amendments to Part 4 of the Commission's Rules Concerning Disruptions to Communications." December 6, 2021.

<https://ecfsapi.fcc.gov/file/1206157775505/NPR%20Resilient%20Networks%20NPRM%20Comments.pdf>

The “Eyes on IPAWS” tool is comprised of an antenna, a receiver, and a window-based app that allows the user to access the output from their local public television station’s PBS WARN feed. Knowing that there were potential use cases that would benefit from the easy access of an Internet-based feed of the WEA alerts, PBS also developed warn.pbs.org, a website that displays active alerts across the country with the ability to filter alerts based on alert type, location, and keyword searches and a look-back feature for expired and cancelled alerts. Emergency managers use these tools daily to identify active WEAs nationwide; confirm transmission, coverage area, and content of issued WEAs; gain awareness of WEAs issued by other agencies; view alerts based on location, alert type, or date; and analyze the impact of WEAs in after-action analysis.

At the request of the California Governor’s Office of Emergency Services (Cal OES), PBS and Sacramento member station KVIE developed tools that would provide the state’s emergency managers a live feed of WEAs from their local public television station and access to expired and cancelled alerts. The alerts are in the Common Alerting Protocol format, which allow emergency managers to use the information for situational awareness, training, and data analytics.

This site has proved very helpful to emergency managers across the country and has been lauded on social media and recommended by FEMA to all alert originators. Expanding and supporting these situational awareness tools would provide valuable resources to emergency managers nationwide for the incremental costs of software development, testing, installation, and support.

Public Safety & ATSC 3.0 (“NextGen TV”)

The broadcast industry is undertaking a major transition, moving from the current broadcast standard Advanced Television Systems Committee (ATSC) 1.0 to a new Internet Protocol-based ATSC 3.0, or the Next Generation (NextGen TV) television standard. In February 2018, the Federal Communications Commission (FCC) published the standard for voluntary adoption by both public and commercial television broadcasters. The new standard is currently being deployed, and it is expected that ATSC 3.0 be widely adopted by the industry and by viewers over the next five to ten years.

In addition to enhanced accessibility and audio-visual enhancements, one of the principal benefits of NextGen TV is enhanced public safety alerting. The features and functionality of the new standard are particularly well-suited to advance the public safety work of public television stations. For example, the NextGen TV standard will enable enhanced geo-targeting of alerts and could provide comprehensive auxiliary data, such as evacuation routes and weather maps. The standard also allows broadcasters to “wake up” receiver devices when an emergency alert is transmitted, facilitating the dissemination of critical information, particularly at night, when severe weather or other emergencies may occur.

Section 6.4 of the FCC’s Communications, Security, Reliability, and Interoperability Council’s (CSRIC) Working Group 2 June 2018 final report provides an example of how a public television station can use the new broadcast standard to improve emergency alerting:

“NextGen TV: Saving Lives One Alert at a Time, UNC-TV (now PBS North Carolina) won first place in the National Association of Broadcasters (NAB) Pilot Innovation Challenge for a proposal that uses datacasting technology in broadcast television to update outdated first responder emergency pagers. Initial tests show

the potential to decrease a fire station’s time to respond to a given alert by nearly one minute for each notification. The project currently uses ATSC 1.0 to reach fire stations across the state. Once ATSC 3.0 broadcasting is implemented, updated receivers connected to mobile devices will allow mobile paging for first responders, even in areas where LTE service does not reliably reach.”

In August 2021, PBS North Carolina, the North Carolina Department of Information Technology (NCDIT)’s FirstTech program, and Device Solutions Inc. were awarded a Small Business Innovation Research grant by DHS to continue the development of a new emergency digital paging system over public television. The emergency digital paging system utilizes digital ATSC 3.0 TV technology to deliver an affordable paging structure to improve situational awareness and response time for first responders across the state of North Carolina. The system will help first responders with increased coverage area and penetration, reduce delay, and provide a secure and reliable means for transmitting emergency alerts. Chief Technology Officer at PBS North Carolina, Fred Engel, notes, “This award allows us to continue to explore the many other capabilities of this technology that will serve the public, starting with emergency communications.”

NextGen TV technology could also allow public broadcasters to better serve those who are hearing and visually impaired. For the first time, stations could transmit closed caption sign language alongside their broadcasts to provide a more complete experience for hearing impaired viewers. Further, the system would be able to provide greater dialogue intelligibility by allowing users to independently adjust the non-dialogue elements of a program’s audio track. In addition, closed captions and subtitles could be offered in multiple languages and could transmit through either broadcast or broadband.

For public television to provide these enhanced alerting services, stations must make a costly technology transition. During a panel discussion in February 2021, Madeleine Noland, president of ATSC, told audience members that updating a single transmission tower to ATSC 3.0 would cost approximately \$600,000 for minimal upgrades, but the cost could increase to \$3 million if significant tower work is needed.⁸ Unfortunately, many public television stations have been forced to push their infrastructure and equipment beyond its optimal end of life due to financial uncertainties. As a result, the upgrade to ATSC 3.0 may be on the higher end of this range.

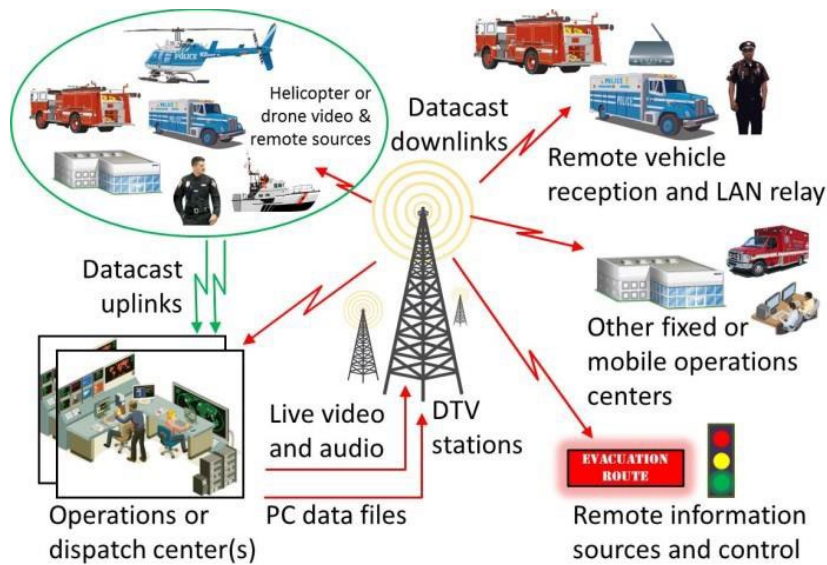
The Next Generation Warning System grant program will enable the expansion and enhance the reliability of the alert, warning, and interoperable communications activities that public broadcasting stations are committed to, while providing first responders and public safety officials with critical new communication resources.

Public Safety Station Examples

- PBS North Carolina uses its statewide broadcast network, livestreaming capabilities, and digital platforms to provide vital information to the public. It is a crucial link between public officials and the more than 10 million North Carolina citizens before, during and after emergencies. This essential service includes:

⁸ <https://www.tvtechnology.com/news/noland-details-atsc-30-transition-costs-for-public-tv-stations>

- Transmission Sites: Over 40 Federal, State, and Local agencies, including law enforcement and emergency management organizations, depend on 20 PBS NC towers for their communication systems.
 - Distribution Networks: The PBS NC microwave radio infrastructure serves as the critical backbone for the State Highway Patrol and North Carolina Emergency Management communication networks.
 - Emergency Broadcasts: PBS NC broadcasts, streams, and distributes vital emergency information accessible via various media and digital platforms. This information includes North Carolina Emergency Operations Center briefings from the Governor and other national, state, and local authorities.
- Approximately a decade ago, WUFT-FM (Gainesville, FL) and a collaboration of public media stations throughout Florida created the Florida Public Radio Emergency Network or “FPREN,” which provides public media with the tools to deliver comprehensive public safety and emergency communications across broadcast and digital platforms to support listeners, emergency management officials, and first responders. FPREN has provided real-time multimedia content to public media in Florida for various severe weather events, including Hurricanes Fiona, Ian, Irma, Michael, Matthew, and Nicole. Two years ago, FPREN expanded its service to include the South Carolina Emergency Information Network.
 - During weather emergencies, the Houston Fire Department and Houston Police Department can use Houston Public Media’s datacasting technology to stream live video of weather conditions and fire hazards to the Emergency Operations Center. Datacasting also provides first responders with the ability to securely communicate during the crisis to help them assess conditions and make informed decisions. When needed, Houston Public Media can use its radio multicast channels to broadcast multiple programs at once to provide comprehensive storm coverage to listeners.



- In Ohio, OEAS Public Alertnet covers the entire state with a joint datacast project that supports emergency alerting bound for the public. A companion to the existing EAS system, Alertnet does not rely on the Internet and provides a common infrastructure tying all eight Ohio public TV licensees and their 12 public television stations together for future public safety needs.⁹ Nationwide deployment of the Alertnet concept could help meet one of the recommendations from the FEMA National Advisory Council to use “public media broadcasts as one such technology to supplement the national ‘Primary Entry Point’ (PEP) strategy,”¹⁰ ensuring that all-hazard alerts reach the intended recipients every time.
- Jefferson Public Radio in Ashland, Oregon, created an online tool called the “JPR Wildfire Tracker,” to track the status of every active wildfire since the summer 2021 wildfire season.
- Twin Cities Public Television (TPT) provides real-time health and public safety warnings and alerting for multilingual and non-English speaking audiences. This service fills a communication gap for police, fire, emergency management and other “initiators of warning and alerts” by working with public safety and cultural communities to pre-load or customize messages so broadcast viewers can see and hear warnings and alerts in English, Spanish, Hmong, and Somali.¹¹ Additional funding resources would allow TPT to collaborate with technology and software developers and PBS Warn to build and test a new multilingual alerting support system based in the cloud. This new emergency alert solution is adaptable and can be scaled to support any alert originator nationwide.

⁹ <https://www.radioworld.com/news-and-business/ohio-digital-alerting-system-is-active>

¹⁰ Modernizing the Nation’s Public Alert and Warning System Report from the FEMA National Advisory Council, February 15, 2019. https://www.fema.gov/media-library-data/1550587427456-30d4179ee4fa8b97ecf4ab6bee76ace6/NAC_IPAWS_Subcommittee_Final_Report.pdf

¹¹ <https://www.twincities.com/2019/07/07/local-station-wants-to-be-source-for-limited-english-speaking-communities-before-and-after-a-crisis/>

- Maine Public Broadcasting Network makes its statewide spectrum available to federal and state authorities to communicate with first responders and the media in the event of an emergency. The one-way closed communication system is designed to work even when Internet connections and electricity are not working.
- During severe weather, KOSU-FM in Stillwater, Oklahoma, and Oklahoma City, provide continuous live information about power restoration, debris clean up, and information about services being offered on an emergency basis.
- Vegas PBS works with Clark County Emergency Management to provide an immediate alternate phone bank, using existing pledge banks, to take non-emergency calls during an incident that taxes primary emergency operations centers. Vegas PBS also has a partnership with emergency officials that includes a database of floor plans and student contact information for more than 400 school buildings, all of it available instantly to first responders via the station's datacasting system. It was used during a forest fire near one school.
- WWNO-FM in New Orleans is MetaPub enabled and links to the NOAA/NWS forecast stream so that local station weather can appear across screens. In September 2021, when Hurricane Ida took down the power grid and knocked many commercial radio stations off the air, WWNO remained one of the few stations left to broadcast vital information in New Orleans.
- New Hampshire PBS (NHPBS) is part of a microwave network across the state that services Homeland Security, the Departments of Safety, Transportation, Economic Development, and the National Guard. Funds from a newly created Next Generation Resilient Warning System account could be used to maintain equipment for this important network. Further, NHPBS is located within 30 miles of a nuclear power plant and 90 minutes north of Boston. Should there be a major event along the New Hampshire seacoast or Boston south, the New Hampshire Department of Safety's Interoperability Office anticipates many people from the south heading to the north and west to evacuate. To provide emergency support services in this scenario, NHPBS would need to: 1) upgrade the studio generator to power the entire building including the studio; 2) upgrade the uninterruptable power system (UPS) to handle the entire building; 3) procure a new LED lighting system to reduce power loads; and 4) upgrade the phone system to handle emergency communications for the region.
- WHRO Public Media in Hampton Roads, Virginia, interconnects the public safety agencies in the area with multiple emergency operation centers (EOCs) and other critical public safety locations via their optical fiber network. Through cooperative efforts, WHRO connects to this network and receives video content from any connected EOC. The use of standard video conferencing equipment turns every EOC into a broadcast-ready location for press briefings and on-air news conferences.
- Georgia Public Broadcasting (GPB) partners with the Georgia Emergency Management Agency (GEMA) to distribute critical information in times of emergency. Along with

standard EAS alerts for radio and television, GPB serves as the official distributor of evacuation route information during state-ordered evacuations. Evacuation route signs are marked with corresponding radio station frequencies. In an emergency, GPB interrupts regular programming to provide lifesaving information. GPB also works directly with the Governor's office to deliver critical updates from the Governor and GEMA officials over radio and over GPB's digital services including web, and mobile apps.

- Tennessee public television stations (WKNO, Memphis; WLJT, Lexington; WNPT, Nashville; WCTE, Cookeville; East Tennessee PBS, Knoxville; and WTCI, Chattanooga) use part of their broadcast spectrum to deliver encrypted videos, files, alerts, and other data to officials statewide, as needed, during emergencies and natural disasters.
- South Carolina Educational Television (SCETV) is responsible for the ownership and management of all state transmitter sites and interconnecting networks. This includes infrastructure used by and implemented for state public safety and government operational radio systems. This is one of several examples where public media entities host or share site costs, emergency power and technical staff resources.
- KVIE public television in Sacramento has worked with the California Office of Emergency Services (Cal OES) to figure out how to deliver early earthquake warnings faster. In a field test using public television's datacasting ability, an early earthquake warning was delivered in under three seconds. The previous warning standard was 30 seconds. Four other California public television stations, KPBS in San Diego, KQED in San Francisco, PBS SoCal in Los Angeles, and Valley PBS in Fresno participated in subsequent testing of public television's datacasting system for earthquake early warnings.

FY 2024 PROPOSED APPROPRIATIONS LANGUAGE

Federal Funds

DEPARTMENT OF HOMELAND SECURITY- FEMA, FEDERAL ASSISTANCE

Of the amounts made available to the Department of Homeland Security Federal Assistance account for fiscal year 2024, \$56,000,000 for the Next Generation Warning System.

Report Language

Next Generation Warning System- This recommendation includes \$56,000,000 for the NGWS. The first priority of the NGWS program is to help Corporation for Public Broadcasting qualified public media entities replace aging infrastructure that is essential to their role in civil defense and public safety. The Committee expects to work closely with the Corporation for Public Broadcasting to implement this program for CPB-qualified public broadcasting entities as defined in 47 U.S.C. 397(11).

Appendix A

Highlights of Public Television and Public Radio Equipment Needs*

Station Name	City	State	Cost	Infrastructure Needs
Alabama Public Television	Birmingham	AL	\$4,000,000.00	6 antenna w/ V Pol and interim antennas
Alabama Public Television	Birmingham	AL	\$700,000.00	Whole House Uninterruptable Power Supply (UPS) for 5 Transmitter sites
Alabama Public Television	Birmingham	AL	\$450,000.00	Datacasting equipment for each transmitter site
ALABAMA EXAMPLES TOTAL			\$5,150,000.00	
Alaska - KUAC TV/FM	Fairbanks	AK	\$250,000.00	TV Transmitter
Alaska - KUAC TV/FM	Fairbanks	AK	\$150,000.00	Uninterruptable Power Supply
Alaska - KUAC TV/FM	Fairbanks	AK	\$100,000.00	IP Network Site Transmission Line
Alaska - KUAC TV/FM	Fairbanks	AK	\$6,000.00	Back-up ST: & Network for Transmitter Remote Control for TV & FM
ALASKA EXAMPLES TOTAL			\$506,000.00	
Arizona PBS	Phoenix	AZ	\$1,248,000.00	Routing Switcher
Arizona PBS	Phoenix	AZ	\$678,000.00	Production switchers
Arizona PBS	Phoenix	AZ	\$350,000.00	Transmitter
Arizona PBS	Phoenix	AZ	\$280,000.00	8 Translators
ARIZONA EXAMPLES TOTAL			\$2,556,000.00	
PMG SoCAL	Los Angeles	CA	\$850,000.00	2 TV Back Up Transmitters - Mt. Wilson
PMG SoCAL	Los Angeles	CA	\$350,000.00	2 TV Back Up Antennas - Mt. Wilson
PMG SoCAL	Los Angeles	CA	\$650,000.00	HVAC System Replacement Mt. Wilson
PMG SoCAL	Los Angeles	CA	\$550,000.00	Fire Suppression System Mt. Wilson
PMG SoCAL	Los Angeles	CA	\$90,000.00	2 TV Receiver/Antenna/Synchronization Equip
PMG SoCAL	Los Angeles	CA	\$450,000.00	4 TV Translator Transmitters
PMG SoCAL	Los Angeles	CA	\$385,000.00	4 TV Translator Antennas
PMG SoCAL	Los Angeles	CA	\$200,000.00	4 TV Translators Encoders
PMG SoCAL	Los Angeles	CA	\$20,000.00	5 TV Receiver/IRD
PMG SoCAL	Los Angeles	CA	\$350,000.00	5 IP Microwave Links (Mt. Wilson and Translator Network)
PMG SoCAL	Los Angeles	CA	\$140,000.00	2 Routine Remote Access
PMG SoCAL	Los Angeles	CA	\$350,000.00	Satellite Receive/Uplink Antennas
PMG SoCAL	Los Angeles	CA	\$50,000.00	CAL Office of Emergency Services
PMG SoCAL	Los Angeles	CA	\$200,000.00	NextGen TV Test and Monitoring Equipment
PMG SoCAL	Los Angeles	CA	\$100,000.00	NextGen TV DA and Modular Equipment
PMG SoCAL	Los Angeles	CA	\$25,000.00	2 NextGen TV EAS Encoders
PMG SoCAL	Los Angeles	CA	\$250,000.00	Network Interfaces (network, routers, etc.)
PMG SoCAL	Los Angeles	CA	\$600,000.00	2 TV Encoding Systems KOCE and KCET
PMG SoCAL	Los Angeles	CA	\$60,000.00	Cabling, Racks, Mounting Hardware
PMG SoCAL	Los Angeles	CA	\$40,000.00	GPU-Accelerated Enterprise Transcoding Server
PMG SoCAL	Los Angeles	CA	\$12,000.00	UX Testing/QA/Demo Hardware
CALIFORNIA EXAMPLES TOTAL			\$5,722,000.00	
Rocky Mountain Public Media	Denver	CO	\$60,000.00	10 Translators
Rocky Mountain Public Media	Denver	CO	\$37,000.00	KTSC Raydom Replacement Transmitter
Rocky Mountain Public Media	Denver	CO	\$9,000.00	The Drop Replacement Transmitter
Rocky Mountain Public Media	Denver	CO	\$16,000.00	2 IT Switch Catalyst 9300 48-port UPOE
Rocky Mountain Public Media	Denver	CO	\$5,000.00	Portable HD/SDI Test Generator & Monitor
Rocky Mountain Public Media	Denver	CO	\$7,000.00	Rooftop Network Infrastructure Buildout
Rocky Mountain Public Media	Denver	CO	\$62,000.00	KRMA/KTSC/KRMJ/KRMU MPEG and RF Analyzer Replacements
Rocky Mountain Public Media	Denver	CO	\$16,000.00	Vidcheck Module for Vantage
COLORADO EXAMPLES TOTAL			\$212,000.00	
Connecticut Public Media	Hartford	CT	\$35,000.00	7 uninterruptible Power Sources
Connecticut Public Media	Hartford	CT	\$365,000.00	WEDN-TV Transmitter
Connecticut Public Media	Hartford	CT	\$80,000.00	WPKT-FM Radio Transmitter & Antenna
Connecticut Public Media	Hartford	CT	\$80,000.00	WRLI-FM Radio Transmitter and Transmission Line Replacement
Connecticut Public Media	Hartford	CT	\$100,000.00	WRLI Backup Generator
Connecticut Public Media	Hartford	CT	\$100,000.00	WEDW Backup Generator
Connecticut Public Media	Hartford	CT	\$250,000.00	Microwave Transmission System
CONNECTICUT EXAMPLES TOTAL			\$1,010,000.00	
WEFS-TV	Cocoa	FL	\$132,000.00	Cocoa Tower Anchor & Guide Cable Reinforcement
WEFS-TV	Cocoa	FL	\$50,000.00	Lightning Protection
WEFS-TV	Cocoa	FL	\$375,000.00	Transmission Chain Update
WEFS-TV	Cocoa	FL	\$100,000.00	Studio to Transmitter Link
WEFS-TV	Cocoa	FL	\$70,000.00	Station Uninterrupted Power Supply
WEFS-TV	Cocoa	FL	\$45,000.00	Router (multi-viewer)
WUFT-TV	Gainesville	FL	\$1,500,000.00	WUFT-TV Transmitter, line, and antenna
WUFT-TV	Gainesville	FL	\$200,000.00	WUFT-TV/FM STL Equipment (transmitter/receiver)
WUFT-TV	Gainesville	FL	\$18,000.00	WUFT TV House Sync Generator
WUFT-TV	Gainesville	FL	\$233,300.00	House Uninterrupted Power Supply
WUFT-TV	Gainesville	FL	\$80,000.00	WUFT-FM Transmitter
WUFT-TV	Gainesville	FL	\$80,000.00	WJUF-FM Transmitter
WJCT-TV	Jacksonville	FL	\$160,000.00	Studio Building Backup Generator
WJCT-TV	Jacksonville	FL	\$120,000.00	Studio Building UPS
WJCT-TV	Jacksonville	FL	\$80,000.00	Transmitter Site Backup Generator

*This is a sample of critical local public broadcast station needs as of June 2022. It is not intended to be an exhaustive list.

WJCT-TV	Jacksonville	FL	\$60,000.00	Transmitter Site Uninterrupted Power Supply
WJCT-TV	Jacksonville	FL	\$485,000.00	Transmission Chain Update (Encoding, EAS, WARN)
WJCT-TV	Jacksonville	FL	\$15,000.00	IP Studio-Transmitter Link
WJCT-TV	Jacksonville	FL	\$20,000.00	Importer/Exporter
WJCT-TV	Jacksonville	FL	\$25,000.00	FM Axia Nodes
WJCT-TV	Jacksonville	FL	\$30,000.00	ENCO Radio Automation
WFSU Public Media	Tallahassee	FL	\$1,700,000.00	Transmitter and Antenna Replacement for WDSU-TV
WFSU Public Media	Tallahassee	FL	\$470,000.00	Broadcast Operations Equipment Update (Encoding,EAS, WARN)
WFSU Public Media	Tallahassee	FL	\$50,000.00	Replacement of Fuel tank for Back-Up Generator
WEDU Public Media	Tampa	FL	\$495,000.00	Transmission Chain Update (encoding, EAS)
WEDU Public Media	Tampa	FL	\$300,000.00	Transmitter
WEDU Public Media	Tampa	FL	\$300,000.00	Dielectric Antenn
WEDU Public Media	Tampa	FL	\$20,000.00	Monitoring System
WEDU Public Media	Tampa	FL	\$100,000.00	Uninterrupted Power Supply
WEDU Public Media	Tampa	FL	\$700,000.00	Updated generator
WEDU Public Media	Tampa	FL	\$200,000.00	Tower Repairs
FLORIDA EXAMPLES TOTAL			\$8,213,300.00	
Public Broadcasting Atlanta	Atlanta	GA	\$75,000.00	Backup Audio processing for FM/HD
Public Broadcasting Atlanta	Atlanta	GA	\$150,000.00	Automation System Hardening - Backup and Servres
Public Broadcasting Atlanta	Atlanta	GA	\$400,000.00	GHZ Microwave replacement
Public Broadcasting Atlanta	Atlanta	GA	\$300,000.00	Microwave replacement
Public Broadcasting Atlanta	Atlanta	GA	\$250,000.00	Solid State FM/HD Transmitter
Public Broadcasting Atlanta	Atlanta	GA	\$200,000.00	Uninterrupted Power Supply System
Public Broadcasting Atlanta	Atlanta	GA	\$150,000.00	Transmitter Site Coax Switch
Public Broadcasting Atlanta	Atlanta	GA	\$165,000.00	IT Infrastructure upgrade/hardening/security
GEORGIA EXAMPLES TOTAL			\$1,690,000.00	
Hawaii PBS	Honolulu	HI	\$170,000.00	KHET Transmitter
Hawaii PBS	Honolulu	HI	\$170,000.00	KMEB Transmitter
Hawaii PBS	Honolulu	HI	\$470,000.00	KHET Antenna System
Hawaii PBS	Honolulu	HI	\$570,000.00	KMEB Antenna System
Hawaii PBS	Honolulu	HI	\$300,000.00	Station Networking Infrastructure
Hawaii-KKCR-FM	Kaua'i	HI	\$20,000.00	Backup emergency Generator, Transfer Switch, Electrical FM Transmitter
Hawaii-KKCR-FM	Kaua'i	HI	\$20,000.00	FM Transmitter
Hawaii-KKCR-FM	Kaua'i	HI	\$20,000.00	FM Broadcast Antenna
Hawaii-KKCR-FM	Kaua'i	HI	\$25,000.00	Digital Audio consoles
Hawaii-KKCR-FM	Kaua'i	HI	\$12,000.00	Uninterrupted Power Supply Backup Power
Hawaii-KKCR-FM	Kaua'i	HI	\$20,000.00	Inter-Island Microwave System
HAWAII EXAMPLES TOTAL			\$1,797,000.00	
Idaho Public Television	Boise	ID	\$95,000.00	YFRP Generator, Transfer Switch, Electrical
Idaho Public Television	Boise	ID	\$1,400,000.00	4 Transmitters (Dual Exciter)
Idaho Public Television	Boise	ID	\$1,000,000.00	4 antennas
Idaho Public Television	Boise	ID	\$200,000.00	4 installations
Idaho Public Television	Boise	ID	\$154,000.00	4 transmission lines
Idaho Public Television	Boise	ID	\$360,000.00	4 duplex studio transmission lines
Idaho Public Television	Boise	ID	\$15,000.00	Delivery & Signaling Server
Idaho Public Television	Boise	ID	\$59,050.00	5 IP Gateway Devices
Idaho Public Television	Boise	ID	\$25,000.00	Virtualized Modulator/IP Switches
Idaho Public Television	Boise	ID	\$30,000.00	Encoding Plant Upgrade
Idaho Public Television	Boise	ID	\$825,000.00	46 Transcoder Front Ends for Translators
Boise State Public Radio	Boise	ID	\$95,000.00	YFRP Generator, Transfer Switch, Electrical
Boise State Public Radio	Boise	ID	\$2,500.00	Uninterrupted Power Supply for SMASH Downlink
Boise State Public Radio	Boise	ID	\$7,500.00	240v UPS for KBSK, KBSQ,KBSM, battery bank
Boise State Public Radio	Boise	ID	\$25,000.00	KBSW Generator
Boise State Public Radio	Boise	ID	\$45,000.00	2 Generators, Uninterrupted Power Supply, Transfer switches
Boise State Public Radio	Boise	ID	\$6,000.00	Salmon, Challis Uninterrupted Power Supply & Battery runtime improvements
Boise State Public Radio	Boise	ID	\$15,000.00	Stanley School Uninterrupted Power Supply, Generator
Boise State Public Radio	Boise	ID	\$2,000.00	Ketchum School Uninterrupted Power Supply
Boise State Public Radio	Boise	ID	\$5,000.00	2 uninterruptable power sources
Boise State Public Radio	Boise	ID	\$15,000.00	EAS Endecs, receivers, route to air for KBSK, KBSQ, KBSM
Boise State Public Radio	Boise	ID	\$32,200.00	Enhanced RDS and HD Alert messaging on KBSK, KBSQ, KBSM
Boise State Public Radio	Boise	ID	\$5,300.00	EAS aduio from Elko to KBSJ
Boise State Public Radio	Boise	ID	\$91,650.00	Salmon coverage update, HD enabled, full messaging and alerting
Boise State Public Radio	Boise	ID	\$91,650.00	Challis coverage update, HD enabled, full messaging and alerting
Boise State Public Radio	Boise	ID	\$19,000.00	Cambridge transmitter, antenna, receiver replacement
Boise State Public Radio	Boise	ID	\$19,000.00	Cascade School - transmitter, receiver
Boise State Public Radio	Boise	ID	\$131,200.00	Stanley Coverage & alert messaging improvements, HD Alerts, MetaPub
Boise State Public Radio	Boise	ID	\$96,300.00	KBSS Main Transmitter, Antennas, Filter, JD Alerts, MetaPub
Boise State Public Radio	Boise	ID	\$5,500.00	Ketchum School program feed
Boise State Public Radio	Boise	ID	\$13,000.00	KBSW HD alerting

Boise State Public Radio	Boise	ID	\$133,500.00	KBSJ Trasmitter, coverage upgrade, HD Alerts, MetaPub
Boise State Public Radio	Boise	ID	\$166,000.00	KBSW coverage improvement
Boise State Public Radio	Boise	ID	\$96,000.00	3 studio transmission lines (STL)
Boise State Public Radio	Boise	ID	\$566,300.00	KBSU, KBSX aux site w/ coverage improvement on KBSX
Boise State Public Radio	Boise	ID	\$120,000.00	2 coverage replacement boosters
IDAHO EXAMPLES TOTAL			\$5,967,650.00	
WTTW	Chicago	IL	\$1,894,000.00	10 AC Units
WTTW	Chicago	IL	\$852,000.00	Humidifier
WTTW	Chicago	IL	\$90,000.00	6 Core Switches
WTTW	Chicago	IL	\$175,000.00	35 Edge Switches
WTTW	Chicago	IL	\$2,500,000.00	Emergency Broadcast System (TV & Radio) Back-up transmitters
Illinois Public Media	Urbana	IL	\$90,000.00	FM transmitter
Illinois Public Media	Urbana	IL	\$35,000.00	FM Studio Transmission Line (STL)
Illinois Public Media	Urbana	IL	\$350,000.00	FM Transmission Antenna
Illinois Public Media	Urbana	IL	\$181,000.00	TV Transmitter
Illinois Public Media	Urbana	IL	\$45,500.00	TV Tower-to-Studio Link
Illinois Public Media	Urbana	IL	\$900,000.00	TV Transmission Antenna
Illinois Public Media	Urbana	IL	\$450,000.00	Transmission Chain Update
ILLINOIS EXAMPLE TOTAL			\$7,562,500.00	
Indiana - WFYI	Indianapolis	IN	\$600,000.00	15kw transmitter and 2 Exciters
Indiana - WFYI	Indianapolis	IN	\$35,000.00	FM Antenna
Indiana - WFYI	Indianapolis	IN	\$12,000.00	FM Backup Transmission Antenna
Indiana - WFYI	Indianapolis	IN	\$20,000.00	FM Backup Transmission 200' Tower Renovation
Indiana - WFYI	Indianapolis	IN	\$82,000.00	Transmitter Roof
Indiana - WFYI	Indianapolis	IN	\$70,000.00	800' Tower Painting
Indiana - WFYI	Indianapolis	IN	\$30,000.00	FM Automation
Indiana - WFYI	Indianapolis	IN	\$200,000.00	Power Generator and transfer Switch
Indiana - WFYI	Indianapolis	IN	\$15,000.00	Building modifications to support new generator
Indiana - WFYI	Indianapolis	IN	\$15,000.00	terminal equipment
Indiana - WFYI	Indianapolis	IN	\$80,000.00	TV router
Indiana - WFYI	Indianapolis	IN	\$125,000.00	Network Refresh
INDIANA EXAMPLES TOTAL			\$1,284,000.00	
Iowa Public Radio	Des Moines	IA	\$875,000.00	1 Transmitter, Transmission Line and Antenna, WOI-FM
Iowa Public Radio	Des Moines	IA	\$325,000.00	1 Transmittion Line and Studio to Transmitter Link, KSUI-FM
IOWA EXAMPLES TOTAL			\$1,200,000.00	
PBS Kansas	Wichita	KS	\$2,025,000.00	Transmitter, Park City
PBS Kansas	Wichita	KS	\$2,025,000.00	Transmitter, Hutchinson
PBS Kansas	Wichita	KS	\$69,000.00	Router
PBS Kansas	Wichita	KS	\$25,000.00	Encoder
PBS Kansas	Wichita	KS	\$4,000.00	Encoder/Decoder
PBS Kansas	Wichita	KS	\$35,000.00	Microwave
PBS Kansas	Wichita	KS	\$1,500.00	Exalt PS & Surge Suppressors
PBS Kansas	Wichita	KS	\$2,500.00	Gateway/Firewall
KANSAS EXAMPLES TOTAL			\$4,187,000.00	
Kentucky Educational Televisior Lexington	KY		\$1,500,000.00	Localized EAS system on 16-station statewide network
Kentucky Educational Televisior Lexington	KY		\$4,345,000.00	FirstNet Air-to-Ground Video over datacast on statewide network
Kentucky Educational Televisior Lexington	KY		\$4,063,000.00	Transmitter site (16 stations) emergency power, HVAC, tower lighting
Kentucky Educational Televisior Lexington	KY		\$1,963,080.00	Network Operations Center emergency power, HVAC security
Kentucky Educational Televisior Lexington	KY		\$12,000,000.00	Statewide network transmission site expansion to increase rural access
Kentucky Educational Televisior Lexington	KY		\$11,500,000.00	Studio to transmitter link/broadcast chain (16 stations)
Louisville Public Media	Louisville	KY	\$75,000.00	New generator at Station
Louisville Public Media	Louisville	KY	\$75,000.00	New generator at Tower
Louisville Public Media	Louisville	KY	\$60,000.00	Uniterruptible Power Source at Tower
Louisville Public Media	Louisville	KY	\$20,000.00	Replace Studio transmission Line (STL)
WKMS-FM	Murray	KY	\$75,000.00	Back up transmitter
WKMS-FM	Murray	KY	\$10,000.00	Studio transmission Link (STL)
WKMS-FM	Murray	KY	\$10,780.00	4 Number EAS Units
WKMS-FM	Murray	KY	\$4,780.00	2 RDS Units
WKMS-FM	Murray	KY	\$100,000.00	Mobile Backup Studio
WKMS-FM	Murray	KY	\$40,000.00	1 Generator
KENTUCKY EXAMPLES TOTAL			\$35,841,640.00	
WYES-TV	New Orleans	LA	\$1,573,145.00	Transmitter
WYES-TV	New Orleans	LA	\$566,000.00	Antenna with V polarization
WYES-TV	New Orleans	LA	\$280,000.00	Antenna Installation
WYES-TV	New Orleans	LA	\$32,700.00	Transmitter Remote Control
WYES-TV	New Orleans	LA	\$350,000.00	Redundant Encoder
WYES-TV	New Orleans	LA	\$69,615.00	Hot Stand-by Studio to Transmitter Link
WYES-TV	New Orleans	LA	\$100,000.00	Tower Strengthening
WWNO-FM/WRKF-FM	New Orleans/Bat.	LA	\$125,000.00	Backup generator

WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$30,000.00	Studio Transmission Line (STL)
WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$12,000.00	Uninterruptable Power Supply
WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$60,000.00	Backup Climate Control Studio
WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$5,000.00	EAS Encoder for transmitter Site
WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$40,000.00	Portable Satellite Downlink System (shared with WRKF-FM)
WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$15,000.00	Satellite Receivers
WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$30,000.00	KTLN Backup Generator
WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$10,000.00	Metapub improvements
WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$10,000.00	Backup Internet equipment
WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$50,000.00	Weather equipment (FPREN)
WWNO-FM/WRKF-FM	New Orleans/Bat	LA	\$250,000.00	Backup Studio at Office of Emergency Management -shared
WRKF	Baton Rouge	LA	\$100,000.00	Backup generator
WRKF	Baton Rouge	LA	\$30,000.00	Studio Transmission Link (STL)
WRKF	Baton Rouge	LA	\$12,000.00	Uninterruptable Power Supply
WRKF	Baton Rouge	LA	\$10,000.00	Backup Climate Control Studio
WRKF	Baton Rouge	LA	\$5,000.00	EAS Encoder for transmitter Site
WRKF	Baton Rouge	LA	\$15,000.00	Satellite receivers
WRKF	Baton Rouge	LA	\$20,000.00	Codecs (two pairs)
WRKF	Baton Rouge	LA	\$10,000.00	Backup Internet equipment
WRKF	Baton Rouge	LA	\$10,000.00	Metapub improvements
WRKF	Baton Rouge	LA	\$10,000.00	Digital online infrastructure
WRKF	Baton Rouge	LA	\$50,000.00	Weather equipment (FPREN)
LOUISIANA EXAMPLES TOTAL			\$3,880,460.00	
Maryland Public Television	Baltimore	MD	\$90,000.00	12 Exciter upgrades to NextGen TV
Maryland Public Television	Baltimore	MD	\$180,000.00	18 Microwave Distribution upgrades
Maryland Public Television	Baltimore	MD	\$30,000.00	3 Fiber Modems
Maryland Public Television	Baltimore	MD	\$160,000.00	4 A/V Encoding/Statmux
Maryland Public Television	Baltimore	MD	\$35,000.00	1 Route Signaling/announcement
Maryland Public Television	Baltimore	MD	\$25,000.00	5 Integration, rack and cabling
Maryland Public Television	Baltimore	MD	\$20,000.00	Integration, rack and cabling for MPT studios
WYPR-FM	Baltimore	MD	\$136,000.00	replacement transmitter
WYPR-FM	Baltimore	MD	\$100,000.00	Studio generator
WYPR-FM	Baltimore	MD	\$75,000.00	transmitter and generator
WYPR-FM	Baltimore	MD	\$20,000.00	New microwave links to WYPR
WYPR-FM	Baltimore	MD	\$212,173.00	New routing system and consoles
WYPR-FM	Baltimore	MD	\$5,900.00	XTRM Site Air Conditioning
MARYLAND EXAMPLES TOTAL			\$1,089,073.00	
Mississippi Public Broadcasting	Jackson	MS	\$3,420,000.00	6 Tower Maintenance and repair to meet current standards
Mississippi Public Broadcasting	Jackson	MS	\$4,180,000.00	5 DTV transmitters
Mississippi Public Broadcasting	Jackson	MS	\$1,600,000.00	8 FM transmitters
Mississippi Public Broadcasting	Jackson	MS	\$970,000.00	18 emergency generators (8 tower, 10 microwave)
Mississippi Public Broadcasting	Jackson	MS	\$1,200,000.00	5 (sets) high intensity LED tower lights (tower site)
Mississippi Public Broadcasting	Jackson	MS	\$880,000.00	11 (sets) medium intensity LED tower light systems (microwave)
Mississippi Public Broadcasting	Jackson	MS	\$997,000.00	7 HDFM antennas
Mississippi Public Broadcasting	Jackson	MS	\$32,000.00	8 LAN switches
Mississippi Public Broadcasting	Jackson	MS	\$80,000.00	1 Digital Television Analyzer
Mississippi Public Broadcasting	Jackson	MS	\$400,000.00	8 elevator inspection and repair tower sites
Mississippi Public Broadcasting	Jackson	MS	\$15,000.00	3 monitor DTV/Radio transport signal
Mississippi Public Broadcasting	Jackson	MS	\$2,000,000.00	19 Microwave Link Equipment
Mississippi Public Broadcasting	Jackson	MS	\$20,000.00	2 Waveguide Transmission Lines
Mississippi Public Broadcasting	Jackson	MS	\$120,000.00	1 Uninterrupted Power Supply
Mississippi Public Broadcasting	Jackson	MS	\$50,000.00	1 monitoring and media on air equipment
Mississippi Public Broadcasting	Jackson	MS	\$15,000.00	1 DTV/FM Audio Compliance Monitoring
MISSISSIPPI EXAMPLES TOTAL			\$15,979,000.00	
KCPT	Kansas City	MO	\$2,200,000.00	NextGen TV Transmitter
KCPT	Kansas City	MO	\$750,000.00	Antenna with 30% Vertical Polarization
KCPT	Kansas City	MO	\$100,000.00	Studio transmitter Link (STL)
KCPT	Kansas City	MO	\$50,000.00	testing and Monitoring equipment
St. Louis Public Radio	St. Louis	MO	\$413,800.00	4 HD Transmitters
St. Louis Public Radio	St. Louis	MO	\$280,000.00	FM antenna and transmission line
St. Louis Public Radio	St. Louis	MO	\$150,000.00	HVAC units for transmitter sites
MISSOURI EXAMPLES TOTAL			\$3,943,800.00	
Montana PBS	Bozeman	MT	\$75,000.00	Routing and distribution, additional services within Network Operations Center
Montana PBS	Bozeman	MT	\$250,000.00	HEVC encoders and licensing
Montana PBS	Bozeman	MT	\$75,000.00	ATSC 3.0 Broadcast Gateway
Montana PBS	Bozeman	MT	\$50,000.00	ATSC 3.0 System Manager
Montana PBS	Bozeman	MT	\$25,000.00	ATSC 3.0 Emergency Alerting
Montana PBS	Bozeman	MT	\$40,000.00	Mask Filters
Montana PBS	Bozeman	MT	\$240,000.00	Replacement of all non-IP microwave links

Montana PBS	Bozeman	MT	\$250,000.00	Replacement of KUFM-TV Missoula transmitter and antenna
Montana PBS	Bozeman	MT	\$250,000.00	Replacement of KBGS-TV Billings transmitter and antenna
Montana PBS	Bozeman	MT	\$100,000.00	Replacement of KUHM-TV Helena antenna
Montana PBS	Bozeman	MT	\$150,000.00	Replacement of KUGF-TV Great Falls Transmitter
Montana PBS	Bozeman	MT	\$120,000.00	Replacement of KUKL transmitter
Montana PBS	Bozeman	MT	\$100,000.00	Network Operations Center equipment replacements
Montana PBS	Bozeman	MT	\$75,000.00	Test and Monitoring equipment
Montana PBS	Bozeman	MT	\$250,000.00	KUSM-TV NOC Emergency Generator and UPS
Montana PBS	Bozeman	MT	\$150,000.00	Microwave site emergency generators
Montana PBS	Bozeman	MT	\$100,000.00	Systems integration
Montana PBS	Bozeman	MT	\$75,000.00	Montana Department of Emergency Services interconnection
Montana PBS	Bozeman	MT	\$150,000.00	Facilities hardening
Montana PBS	Bozeman	MT	\$50,000.00	Mobile communications from remote incidents
Montana PBS	Bozeman	MT	\$200,000.00	Origination, routine, distribution, storage/encoding equipment for improvement of I
Montana PBS	Bozeman	MT	\$400,000.00	Signal expansion in unserved communities (Lewistown, Miles City, Glendive, Dillon)
MONTANA EXAMPLES TOTAL			\$3,175,000.00	
New Hampshire Publiv Televisic Durham		NH	\$10,000.00	Live captioning system for studio
New Hampshire Publiv Television		NH	\$33,000.00	Master Clock system for broadcast
New Hampshire Publiv Televisic Durham		NH	\$60,000.00	Replacement Uninterrupted Power Supply for studio
New Hampshire Publiv Televisic Durham		NH	\$60,000.00	Replace a/c for master control
New Hampshire Publiv Televisic Durham		NH	\$500,000.00	Transmitter saddleback
New Hampshire Publiv Televisic Durham		NH	\$162,000.00	Transmitter hanover
New Hampshire Publiv Televisic Durham		NH	\$70,000.00	Burke Hardware/software to replace ILC system
New Hampshire Publiv Televisic Durham		NH	\$1,500,000.00	Replace Main Tower
NEW HAMPSHIRE EXAMPLES TOTAL			\$2,395,000.00	
WBGO-FM	Newark	NJ	\$70,000.00	Update of IT Infrastructure Servers & Security
WBGO-FM	Newark	NJ	\$45,000.00	Update of IT Infrastructure Network Switches
WBGO-FM	Newark	NJ	\$25,000.00	4 IP Codecs
WBGO-FM	Newark	NJ	\$40,000.00	Automation System Replacement
WBGO-FM	Newark	NJ	\$25,000.00	2 on Air Audio Processing Replacement
WBGO-FM	Newark	NJ	\$35,000.00	HD Radio Exporter/Importer Replacement
WBGO-FM	Newark	NJ	\$125,000.00	Replacement Backup HD Transmitter
WBGO-FM	Newark	NJ	\$10,000.00	2 Backup STL for both Transmitter Sites
WBGO-FM	Newark	NJ	\$25,000.00	Miscellaneous Hardware, Cables, Connectors
NEW JERSEY EXAMPLES TOTAL			\$400,000.00	
KRWG-TV and FM	Las Cruces	NM	\$27,000.00	15 Uninterruptible Power Supplies
KRWG-TV and FM	Las Cruces	NM	\$16,000.00	9 uninterruptible power supplies (UPS)
KRWG-TV and FM	Las Cruces	NM	\$400,000.00	1 Generator, Transfer Switch
KRWG-TV and FM	Las Cruces	NM	\$250,000.00	1 Generator, Transfer Switch
KRWG-TV and FM	Las Cruces	NM	\$150,000.00	1 Generator, Transfer Switch
KRWG-TV and FM	Las Cruces	NM	\$150,000.00	1 Generator, Transfer Switch
KRWG-TV and FM	Las Cruces	NM	\$65,000.00	2 compliance monitoring
KRWG-TV and FM	Las Cruces	NM	\$120,000.00	7 compliance monitoring
KRWG-TV and FM	Las Cruces	NM	\$150,000.00	1 Main transmitter/Change over switch
KRWG-TV and FM	Las Cruces	NM	\$75,000.00	1 audio board
KRWG-TV and FM	Las Cruces	NM	\$10,000.00	1 audio processor
KRWG-TV and FM	Las Cruces	NM	\$4,000.00	1 Backup EAS SAGE
KRWG-TV and FM	Las Cruces	NM	\$3,000.00	1 RDS Encoder
KRWG-TV and FM	Las Cruces	NM	\$30,000.00	1 FM Automation
KRWG-TV and FM	Las Cruces	NM	\$15,000.00	1 Tower LED Lighting
KRWG-TV and FM	Las Cruces	NM	\$250,000.00	1 HVAC Unit
KRWG-TV and FM	Las Cruces	NM	\$45,000.00	1 Microwave STL
KRWG-TV and FM	Las Cruces	NM	\$250,000.00	1 New HVAC
KRWG-TV and FM	Las Cruces	NM	\$10,000.00	1 Partition room for new HVAC system
KRWG-TV and FM	Las Cruces	NM	\$20,000.00	1 Replace Electrical feedline to building
KRWG-TV and FM	Las Cruces	NM	\$60,000.00	1 Signal Analyzing Equipment
KRWG-TV and FM	Las Cruces	NM	\$12,000.00	3 Transmitters CrownFM30
KRWG-TV and FM	Las Cruces	NM	\$9,000.00	1 Transmitter CrownFM600
KRWG-TV and FM	Las Cruces	NM	\$7,000.00	1 Transmitter Crown FM250
NEW MEXICO EXAMPLES TOTAL			\$2,128,000.00	
New York Public Radio	New York	NY	\$1,155,000.00	Upgrade and modernize on-air delivery system for remote use
New York Public Radio	New York	NY	\$146,750.00	Upgrade Microwave STL to auxillary transmitter site
New York Public Radio	New York	NY	\$181,160.00	Replace failed, unsilenced microwave STL to main transmitter site
New York Public Radio	New York	NY	\$67,000.00	Replace wireless intercom system
New York Public Radio	New York	NY	\$262,000.00	Replace auxillary transmitter site for WNYC-FM and WQXR
New York Public Radio	New York	NY	\$50,000.00	1 new generator for WNJP-FM transmitter site
New York Public Radio	New York	NY	\$2,100,000.00	Upgrade audio routing and mixing platform
NEW YORK EXAMPLES TOTAL			\$3,961,910.00	
Prairie Public	Fargo	ND	\$4,750,000.00	Microwave Intercity System Pkg

Prairie Public	Fargo	ND	\$100,000.00	Studio Transmitter Line (STL)
Prairie Public	Fargo	ND	\$3,150,000.00	9 Television Transmitter Pkg
Prairie Public	Fargo	ND	\$3,000,000.00	10 Radio Transmitter Pkg
Prairie Public	Fargo	ND	\$200,000.00	Generator
NORTH DAKOTA EXAMPLES TOTAL			\$11,200,000.00	
PBS North Carolina	Research Triangle NC		\$8,076,173.00	14 Primary Uninterruptable Power Supply (UPS)
PBS North Carolina	Research Triangle NC		\$3,822,967.00	14 primary emergency power generators
PBS North Carolina	Research Triangle NC		\$4,253,205.00	13 Redundant Emergency Power Generators
PBS North Carolina	Research Triangle NC		\$2,839,568.00	Microwave System Replacement (All 50+ Sites)
PBS North Carolina	Research Triangle NC		\$662,131.00	Fiber to transmitters (full power sites)
NORTH CAROLINA EXAMPLES TOTAL			\$19,654,044.00	
OETA	Oklahoma City	NC	\$950,000.00	Transmitter Replacement (Eugaula, OK)
OETA	Okalahoma City	Oklahoma	\$1,750,000.00	Transmitter and Transmission Line Replacement (KOED-Tulsa, OK)
OETA	Okalahoma City	Oklahoma	\$780,000.00	LPTV Sites - transmitter replacement -Qty 13 (OK Statewide Location)
OETA	Okalahoma City	Oklahoma	\$250,000.00	HVAC Replacement - Qty 5 (KETA-OKC, OK)
OETA	Okalahoma City	Oklahoma	\$150,000.00	NOC Facility Upgrades (KETA - OKC, OK)
OETA	Okalahoma City	Oklahoma	\$110,000.00	Avid System Upgrade (KETA-OKC-OK)
OETA	Okalahoma City	Oklahoma	\$27,000.00	4.5 M satellite downlink (KETA-OKC, OK)
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$45,000.00	2 studio transmitter link (STL) KOSU
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$9,000.00	FM Exciter for KOSU
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$9,000.00	Audio Processor for KOSU
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$20,000.00	Air Conditioner for KOSU transmitter building
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$30,000.00	Generator replacement for KOSU
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$75,000.00	Pre-cast concrete transmitter building for KOSN
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$140,000.00	FM Transmitter for KOSN
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$140,000.00	FM Transmitter KOSU
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$16,000.00	Tower Plumb and Re-tension KOSU and KOSN
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$8,800.00	Double Conversion Backup Power Supplies KOSU Studio
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$5,000.00	Comrex Access Multitrack Studio Codec
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$6,300.00	Tieline Gateway Studio Codec
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$20,000.00	Portable Emergency Transmitter
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$187,000.00	LED tower light upgrade KOSU
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$160,000.00	LED tower light upgrade KOSN
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$25,000.00	Natural Gas generator for KOSR (20kW)
KOSU-KOSR-KOSN-FM	Oklahoma City/St Oklahoma		\$7,000.00	Air Conditioner for Stillwater tower site
KGOU-FM	Norman	Oklahoma	\$135,000.00	Studio and transmitter power generators (3)
KGOU-FM	Norman	Oklahoma	\$18,000.00	Excters (2)
KGOU-FM	Norman	Oklahoma	\$6,500.00	Broadcast Microwave System
KGOU-FM	Norman	Oklahoma	\$1,200.00	Transmitter monitoring/remote control for norman auxillary transmitter
KGOU-FM	Norman	Oklahoma	\$75,000.00	Backup broadcast and digital studio (remote/offsite)
KGOU-FM	Norman	Oklahoma	\$15,000.00	Portable Emergency Transmitter
KGOU-FM	Norman	Oklahoma	\$25,000.00	Upgrade and relocate Norman auxillary transmitter (offsite)
OKLAHOMA EXAMPLES TOTAL			\$5,195,800.00	
KRCL-FM	Salt Lake City	Utah	\$80,000.00	Transmitter replacements
KRCL-FM	Salt Lake City	Utah	\$100,000.00	Digital on-air console board
KRCL-FM	Salt Lake City	Utah	\$5,000.00	Microwave link
KRCL-FM	Salt Lake City	Utah	\$300,000.00	2 Transmitters
KRCL-FM	Salt Lake City	Utah	\$1,250,000.00	4 Uninterrupted Power Supply
KRCL-FM	Salt Lake City	Utah	\$351,000.00	5 Microwaves
KRCL-FM	Salt Lake City	Utah	\$40,000.00	1 Repeater
KRCL-FM	Salt Lake City	Utah	\$48,000.00	4 transfer switches
KRCL-FM	Salt Lake City	Utah	\$90,000.00	3 HVACs
UTAH EXAMPLES TOTAL			\$2,264,000.00	
KERA	Dallas	TX	\$70,000.00	Quality Control and Monitoring equipment
KERA	Dallas	TX	\$50,000.00	Uninterruptable Power Supplies (UPS)
KERA	Dallas	TX	\$25,000.00	Studio to Transmitter Link (STL) replacement
KERA	Dallas	TX	\$200,000.00	FM Backup Transmitters
TEXAS EXAMPLES TOTAL			\$345,000.00	
Vermont Public Radio	Colchester	Vermont	\$49,000.00	WVBA Transmission Equipment
Vermont Public Radio	Colchester	Vermont	\$25,000.00	WVXR Transmission Equipment
Vermont Public Radio	Colchester	Vermont	\$20,000.00	WBTV-FM Tower Lighting Replacement
Vermont Public Radio	Colchester	Vermont	\$15,000.00	Repurt and Newbury Translator Transmission Equipment
Vermont Public Radio	Colchester	Vermont	\$65,000.00	WVPS, WOXR, WVTQ, Studio to transmitter link replacement
Vermont Public Radio	Colchester	Vermont	\$7,500.00	WVTX Transmission Equipment
VERMONT EXAMPLES TOTAL			\$181,500.00	
KBTC Public Television	Tacoma	Washingtc	\$1,625,000.00	Transmitters - Full Power with redundant exciters and drivers
KBTC Public Television	Tacoma	Washingtc	\$535,000.00	Antennas - Circular Polarized
KBTC Public Television	Tacoma	Washingtc	\$273,000.00	Transmission Line
KBTC Public Television	Tacoma	Washingtc	\$900,000.00	Generators

KBTC Public Television	Tacoma	Washingtc	\$150,000.00	Uninterruptable Power Supply Systems
KBTC Public Television	Tacoma	Washingtc	\$205,000.00	Test and Compliance monitoring
KBTC Public Television	Tacoma	Washingtc	\$250,000.00	Encoding
KBTC Public Television	Tacoma	Washingtc	\$375,000.00	Studio Transmission Line (STL)
KBTC Public Television	Tacoma	Washingtc	\$75,000.00	Remote Control
KBTC Public Television	Tacoma	Washingtc	\$55,000.00	Tower Lighting
WASHINGTON EXAMPLES TOTAL			\$4,443,000.00	
West Virginia Public Media	Charleston	West Virgi	\$2,200,000.00	5 antennas and 5 translators
WEST VIRGINIA EXAMPLES TOTAL			\$2,200,000.00	
Milwaukee PBS	Milwaukee	Wisconsin	\$250,000.00	Station Facility Backup Generator
Milwaukee PBS	Milwaukee	Wisconsin	\$120,000.00	Station Facility Uninterruptible Power Supply
Milwaukee PBS	Milwaukee	Wisconsin	\$55,000.00	Station Facility Power Distribution
Milwaukee PBS	Milwaukee	Wisconsin	\$495,000.00	Broadcast Transmission Chair Update
Wisconsin Public Radio	Madison	Wisconsin	\$1,995,000.00	23 Transmitters
Wisconsin Public Radio	Madison	Wisconsin	\$1,400,000.00	8 Generators
Wisconsin Public Radio	Madison	Wisconsin	\$95,000.00	19 Uninterruptable Power Supplies
Wisconsin Public Radio	Madison	Wisconsin	\$890,000.00	10 Antennas
Wisconsin Public Radio	Madison	Wisconsin	\$600,000.00	14 Studio Transmission Lines
Wisconsin Public Television	Madison	Wisconsin	\$300,000.00	1 transmitter
Wisconsin Public Television	Madison	Wisconsin	\$600,000.00	2 generators
Wisconsin Public Television	Madison	Wisconsin	\$80,000.00	1 Uninterruptible Power Supply
Wisconsin Public Television	Madison	Wisconsin	\$1,500,000.00	5 Studio Transmission Line
WISCONSIN EXAMPLES TOTAL			\$8,380,000.00	
Wyoming PBS	Riverton	Wyoming	\$350,000.00	1 transmitter (Dual Exciter)
Wyoming PBS	Riverton	Wyoming	\$260,000.00	2 transmitter upgrades
Wyoming PBS	Riverton	Wyoming	\$300,000.00	3 antennas
Wyoming PBS	Riverton	Wyoming	\$270,000.00	3 duplex studio transmission lines
Wyoming PBS	Riverton	Wyoming	\$30,000.00	Encoding Plant Upgrade
Wyoming PBS	Riverton	Wyoming	\$508,000.00	36 translators
Wyoming Public Radio	Laramie	Wyoming	\$430,400.00	8, 10 kw transmitters
Wyoming Public Radio	Laramie	Wyoming	\$156,000.00	5, 3.5 kw transmitters
Wyoming Public Radio	Laramie	Wyoming	\$47,400.00	6, 1kr transmitters
Wyoming Public Radio	Laramie	Wyoming	\$39,600.00	6, 500 kw transmitters
Wyoming Public Radio	Laramie	Wyoming	\$123,200.00	22 Digital STL Link
Wyoming Public Radio	Laramie	Wyoming	\$103,500.00	9 Digital processors
Wyoming Public Radio	Laramie	Wyoming	\$42,000.00	5 Backup Generators
Wyoming Public Radio	Laramie	Wyoming	\$88,000.00	8 Low Power FM Antennas
Wyoming Public Radio	Laramie	Wyoming	\$87,000.00	3, medium Power FM Antennas
Wyoming Public Radio	Laramie	Wyoming	\$37,600.00	2 FM Diplexers
Wyoming Public Radio	Laramie	Wyoming	\$327,000.00	3 High Power FM Antennas and Combiners
Wyoming Public Radio	Laramie	Wyoming	\$64,000.00	4 Low Power FM Antennas
WYOMING EXAMPLES TOTAL			\$3,263,700.00	