

Federal Communications Commission

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility	65670	Service: DTV	Call	WETA-TV	Channel: 31 (UHF)
ID:			Sign:		
File	000002	8782			
Number:					
FRN: 000	2107274	Date	10/01		
		Submitted:	/2018		

Applicant Name, Type, and Contact Information

Information

Applicant	Address	Phone	Email	Applicant Type
GREATER WASHINGTON EDUCATIONAL TELECOMMUNICATIONS ASSOC Doing Business As: GREATER WASHINGTON EDUCATIONAL TELECOMMUNICATIONS ASSOC	Legal & Business Affairs Dept. 3939 Campbell Ave Arlington, VA 22206 United States	+1 (703) 998- 2851	LDELANEY@WETA. ORG	Not-for- Profit

Reimbursement Contact Name and Information Reimbursement Contact Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Preparer Contact Name and Information

Contact Information	Applicant	Address	Phone	Email
	Joseph L. Snelson , Jr . Technical Consultant Meintel, Sgrignoli & Wallace	1282 Smallwood Drive, Suite 372 Waldorf, MD 20603 United States	+1 (303) 344- 8037	joe. snelson@mswdtv. com

Broadcaster	Question	Response
Information and Transition Plan	Will the station be sharing equipment with another broadcast television station or stations (e.g., a shared antenna, co-location on a tower, use of the same transmitter room, multiple transmitters feeding a combiner, etc.)? If yes, enter the facility ID's of the other stations and click 'prefill' to download those stations' licensing information.	Yes
	Briefly describe transition plan	WETA proposes to build its repack facility on channel 31 and will be sharing its main antenna, transmission line and combiner with two other parties. See the attached updated narrative for the background and details of its transition plan.

Transmitters	Section	Question	Response
	Transmitter Related Expenses	Do you have transmitter related expenses?	Yes

Auxiliary	Add Transmitter Information					
Transmitter	Section	Question	Response			
	Existing Transmitter Description	Type of change	Purchase New			
		Use	Auxiliary (Backup)			
		Description of Use	Alternate Site backup transmitter			
		Ownership	Owned			
		Owner	N/A			
		Site	N/A			
		Is this transmitter currently shared with another station?	No			
		Is this transmitter currently in operating condition?	Yes			
	Existing Transmitter	Manufacturer				
	Manufacturer and Type	Model	CD100P1			
		Year	1997			
		Туре	Inductive Output Tube			
		IOT Power Type	Single			
		Power Capacity	17.5 kW			

Add Transmitter Information

Auxiliary	New Transmitter Costs					
Transmitter	Section	Question	Response			
	New Transmitter	Use	Auxiliary (Backup)			
		Change Type	Purchase New			
		Is this a request for upgraded equipment?	Yes			
		Manufacturer				
		Model	ULXTE-20			
		Transmitter Type	Solid State			
		Solid State Cooling	Liquid Cooled			
		Solid State Power capacity	12.9 kW			
		Justification for New Transmitter	See attached letter from manufacturer regarding IOT transmitters.			

Auxiliary	Other Transmitter Costs					
Transmitter	Section	Question	Response			
	Electrical Service	Service Entrance (3 phases 800A 208V)	No			
		Switchgear (industrial 800 amp)	No			
		Transformer (480V)	No			
		Power	N/A			
		Rigid Conduit and Wiring	No			
		Size	N/A			
		Length	N/A			
		Other Electrical Service	Yes			

	Description	Electrical contractor to connect transmitter into existing electrical panel and wire heat exchanger into transmitter. Includes material and labor.
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	Туре	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	Yes
	Size	600.0 square feet
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Other Transmitter Cost Not Listed

AuxiliaryOther Transmitter CoTransmitterInformation not provided.

Auxiliary	Add Transmitter Information					
Transmitter	Section	Question	Response			
	Existing Transmitter Description	Type of change	Purchase New			
		Use	Auxiliary (Backup)			
		Description of Use	Used in case of failure of main			
		Ownership	Owned			
		Owner	N/A			
		Site	N/A			
		Is this transmitter currently shared with another station?	No			
		Is this transmitter currently in operating condition?	Yes			
	Existing Transmitter	Manufacturer				
	Manufacturer and Type	Model	DHD15P1			
		Year	2003			
		Туре	Solid State			
		Solid State Cooling	Air Cooled			
		Solid State Power Capacity	3.6 kW			

Auxiliary	New Transmitter Costs					
Transmitter	Section	Question	Response			
	New Transmitter	Use	Auxiliary (Backup)			
		Change Type	Purchase New			
		Is this a request for upgraded equipment?	Yes			
		Manufacturer				
		Model	ULXTE-90			
		Transmitter Type	Solid State			
		Solid State Cooling	Liquid Coolec			
		Solid State Power capacity	56.4 kW			
		Justification for New Transmitter	See attached letter from GatesAir regarding inability to retune current transmitter. See revised narrative. Replacement upgrade is part of a multi-station resolution that includes moving WETA's repack channel from 14 to 31 at an ERP of 1000 kW.			

Auxiliary	Other Transmitter Costs			
Transmitter	Section	Question	Response	
	Electrical Service	Service Entrance (3 phases 800A 208V)	No	
		Switchgear (industrial 800 amp)	No	
		Transformer (480V)	No	
		Power	N/A	
		Rigid Conduit and Wiring	Yes	
		Size	4 inches	
		Length	420.0 feet	
		Other Electrical Service	No	
		Description	N/A	
	HVAC Service	Does the replacement transmitter require HVAC Service?	No	
		Туре	N/A	
		Size	N/A	
		Type Size Other Size Does the Transmitter Building require an addition, modification, other leashold	N/A	
	Transmitter Building Addition/Modification or Leasehold Improvement		No	
		Size	N/A	
	Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A	
		Is a channel 14 Mask Filer needed?	N/A	
		Is additional field engineering time needed?	N/A	
		Number of Days	N/A	

Other Transmitter Cost Not Listed Auxiliary

Transmitter Information not provided.

Primary	Existing Transmitter Information			
Transmitter	Section	Question	Response	
	Existing Transmitter Description	Type of change	Purchase New	
		Use	Primary (Main)	
		Description of Use	N/A	
		Ownership	Owned	
		Owner	N/A	
		Site	N/A	
		Is this transmitter currently shared with another station?	No	
		Is this transmitter currently in operating condition?	Yes	
	Existing Transmitter Manufacturer and Type	Manufacturer		
		Model	DHD15P1	
		Year	2003	
		Туре	Solid State	
		Solid State Cooling	Air Cooled	
		Solid State Power Capacity	3.6 kW	

Existing Transmitter Information

Primary	New Transmitter Costs			
Transmitter	Section	Question	Response	
	New Transmitter	Use	Primary (Main)	
		Change Type	Purchase New	
		Is this a request for upgraded equipment?	Yes	
		Manufacturer		
		Model	ULXTE-90	
		Transmitter Type	Solid State	
		Solid State Cooling	Liquid Cooled	
		Solid State Power capacity	56.4 kW	
		Justification for New Transmitter	See attached letter from GatesAir regading inability to retune current transmitter. See revised narrative. Replacement upgrade is part of a multi-station resolution that includes moving WETA's repack channel from 14 to 31 at an ERP of 1000 kW.	

Primary	Other Transmitter Costs			
Transmitter	Section	Question	Response	
	Electrical Service	Service Entrance (3 phases 800A 208V)	No	
		Switchgear (industrial 800 amp)	Yes	
		Transformer (480V)	Yes	
		Power	500 kVA	
		Rigid Conduit and Wiring	Yes	
		Size	4 inches	
		Length	420.0 feet	
		Other Electrical Service	No	
		Description	N/A	
	HVAC Service	Does the replacement transmitter require HVAC Service?	Yes	
		Туре	Heating and Cooling	
		Size	50 tons	
		Other Size	N/A	
	Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	Yes	
		Size	1000.0 square feet	
	Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A	
		Is a channel 14 Mask Filer needed?	N/A	
		Is additional field engineering time needed?	N/A	
		Number of Days	N/A	

Description

Primary	Other Transmitter Cost Not Listed
Transmitter	Name

Pre-installation survey	Site Survey by GatesAir of main and aux transmitter sites for transmitter layout.

Antennas	Section	Question	Response
	Antenna Related Expenses	Do you have antenna related expenses?	Yes

Existing Antenna Information

Primary

Antenna	Section	Question	Response
	Existing Antenna Description	Type of change	Retune Existing
		Antenna Use	Primary (Main)
		Description of Use	N/A
		Ownership	Leased
		Owner	District of Columbia Joint Tower Venture
		Site	N/A
		Is the existing antenna shared with another station or stations?	Yes
		Is the existing antenna directional?	No
		Is antenna in operating condition?	Yes
		Is antenna located on or in close proximity to an antenna farm?	Yes
	Existing Antenna	Class	Full Power
	Manufacturer and Type	Mounting	Top Mount
		Antenna position in stack	Тор
		Polarization	Horizontal
		Туре	Broadband Panel
		Number of Stations Supported	3
		Number of Panels	48

Design power capacity in use	47.0 %
Lower Limit	470.00 MHz
Upper Limit	860.00 MHz
Other Antenna Type	N/A
ERP: (Effective Radiated Power)	73.0 kW
Manufacturer	DIE
Model	TUP-04-12- 2
Year	1999

Facility ID's and Call Signs of all stations with whom the antenna is shared.

Facility ID	Call Sign
27772	WHUT-TV
74091	WPXW-TV

Adjustment to Existing Antenna

Primary Antenna

Section	Question	Response
Sweep Test of Existing Antenna	Do you need a sweep test of existing antenna?	Yes

Primary Other Antenna Costs

Antenna	Section	Question	Response
	Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	Yes
		Туре	New
		Number of channels supported	3
		Frequencies of channels supported	RF channel
		Frequency	N/A

Enter a list of RF channel numbers.

RF Channel Number
31
33
35

PrimaryOther Antenna Cost Not ListedAntennaInformation not provided.

Auxiliary Antenna				
	Section	Question	Response	
	Existing Antenna Description	Type of change	Purchase New	
		Antenna Use	Auxiliary (Backup)	
		Description of Use	Alternate site backup	
		Ownership	Owned	
		Owner	N/A	
		Site	N/A	
		Is this antenna currently shared with any other stations?	No	
		Is this antenna directional?	No	
		Is antenna in operating condition?	Yes	
		Is antenna located on or in close proximity to an antenna farm?	No	
	Existing Antenna Manufacturer and Type	Class	Full Power	
		Mounting	Side Mount	
		Antenna position in stack	Not in Stack	
		Polarization	Horizontal	
		Туре	Slotted Coaxial	
		Number of Stations Supported	N/A	
		Number of Panels	N/A	
		Design power capacity in use	N/A	
		Lower Limit	N/A	
		Upper Limit	N/A	
		Other Antenna Type	N/A	
		ERP: (Effective Radiated Power)	30.0 kW	

Add Antenna Information

Manufacturer	
Model	TFU-8JST- R03
Year	1998

Auxiliary Antenna	New Antenna Costs			
	Section	Question	Response	
	New Antenna Description	Use	Auxiliary (Backup)	
		Description of Use	See attached Buget Justification: Auxiliary Transmitter Site	
		Change Type	Purchase New	
		Is this a request for upgraded equipment?	No	
		Ownership	Owned	
		Owner	N/A	
		Is antenna shared?	No	
		Is antenna directional?	No	
		Will antenna be located on or in close proximity to an antenna farm?	No	
	New Antenna Manufacturer and Types	Class	Full Power	
		Mounting	Side Mount	
		Antenna position in stack	Not in Stack	
		Polarization	Horizontal	
		Туре	Slotted Coaxial	
		Number of Stations Supported	N/A	
		Number of Panels/Bays	N/A	
		Lower Limit	N/A	
		Upper Limit	N/A	
		Design power capacity in use	N/A	
		Other Antenna Type	N/A	

ERP: (Effective Radiated Power)	240.0 kW
Manufacturer	
Model	TFU-WB
Year	2018
Justification for New Antenna	Current antenna is tuned to channel 27 and cannot be retuned to operate on channel 31. Proposed antenna costs less than exact replacement

Other Antenna Costs

Auxiliary Antenna

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	No
	Туре	
	Number of channels supported	N/A
	Frequencies of channels supported	N/A
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	N/A
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	Single Channel
	Feed Line Size	4 1/16 inches inches

Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	No
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	Yes
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Other Antenna Cost Not Listed

Auxiliary Antenna Information not provided.

Transmissior	n Seffien	Question	Response
	Transmission Line Related Expenses	Do you have transmission line related expenses?	Yes

Auxiliary Transmissio	Add Transmission Line			
	n Section	Question	Response	
	Existing Transmission Line Description	Type of change	Purchase New	
		Use	Auxiliary (Backup)	
		Description of Use	Alternate Transmitter Site	
		Ownership	Owned	
		Owner	N/A	
		Site	N/A	
		Is this transmission currently shared with any other stations?	No	
		Is Transmission Line in operating condition?	Yes	
	Existing Transmission Line Manufacturer and Type	Manufacturer		
		Туре	Rigid	
		Diameter	3 1/8 inches	
		Other Diameter	N/A	
		Segment Length	19 1/2 inches	
		Other Segment Length	N/A	
		Number of parallel runs	1	
		Length	521 feet per run	

Auxiliarv	New Transmission Line		
Transmissio	on Line Section	Question	Response
	New Transmission Line Costs	Use	Auxiliary (Backup)
		Description of Use	Off site Interim
		Change Type	Purchase New
		Is this a request for upgraded equipment?	No
		Туре	Rigid
		Diameter	4 1/16 inches
		Other Diameter	N/A
		Segment Length	20 inches
		Other Segment Length	N/A
		Number of parallel runs	1
		Length	550 feet per run
		Justification for New Transmission Line	See revised attached budget narrative. Line is not of standard length. Ability to support temporary operations reliably while main site is being converted to channel 31 is questionable. There is a high risk of failure.

Other Transmission Line Expenses Not Listed Transmission

Primary	Add Transmission Line			
Transmissio	n Line Section	Question	Response	
	Existing Transmission Line Description	Type of change	Purchase New	
		Use	Primary (Main)	
		Description of Use	N/A	
		Ownership	Owned	
		Owner	N/A	
		Site	N/A	
		Is this transmission currently shared with any other stations?	No	
		Is Transmission Line in operating condition?	Yes	
	Existing Transmission	Manufacturer		
	Line Manufacturer and Type	Туре	Rigid	
		Diameter	3 1/8 inches	
		Other Diameter	N/A	
		Segment Length	20 inches	
		Other Segment Length	N/A	
		Number of parallel runs	1	
		Length	170 feet per run	

Primary	New Transmission Line			
Transmissio	n Line Section	Question	Response	
	New Transmission Line Costs	Use	Primary (Main)	
		Description of Use	N/A	
		Change Type	Purchase New	
		Is this a request for upgraded equipment?	Yes	
		Туре	Rigid	
		Diameter	6 1/8 inches	
		Other Diameter	N/A	
		Segment Length	20 inches	
		Other Segment Length	N/A	
		Number of parallel runs	1	
		Length	170 feet per run	
		Justification for New Transmission Line	Current line will not support higher power level to meet ERP determined from multi- station resolution.	

Primary	Other Transmission Line Expenses Not Listed	
Transmissio	n Line	Description

ssion _l	Line	Description
	Installation	Estimated removal of current line and installation of new. installation

Tower	Section	Question	Response
Equipment And Rigging Costs	Tower Equipment or Rigging Costs Changes	Do you have tower equipment or rigging costs changes?	Yes

Auxiliary
Towar

Add Tower

Tower

Section	Question	Response
Existing	Type of change	Modify Existing
Tower Description	Tower Use	Auxiliary (Backup)
	Description of Use	Alternate site for WETA
	Ownership	Owned
	Is this tower consider Complex?	No
	Is this tower currently shared with any other stations?	Yes
	One or more FM, AM or TV radio broadcaster(s)	Yes
	Others Types of Users	Yes
	Is tower documented for structural analysis?	Yes
	Is tower compliant with Rev G?	No
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1018169
Coordinates	Latitude (NAD83)	38° 53' 30.0" N-
(NAD83 (North	Longitude (NAD83)	077° 07' 54.0" W-
American Datum of 1983))	Overall Structure Height	495.40 feet
	Support Structure Height	492.12 feet
	Ground Elevation Above Mean Sea Level (AMSL)	370.07 feet
	Structure Type	LTOWER - Lattice Tower

Tower Owner	GREATER WASHINGTON EDUCATIONAL TELECOMMUNICATIONS ASSN DBA = WETA FM
Date Constructed	02/12/2014

FM, AM or TV radio broadcasters. Facility ID's, Call Signs and Services of other broadcast stations with whom the tower is shared

Facility ID	Call Sign	Service
4644	WAVA-FM	FM
12460	WGTS	FM
65669	WETA	FM

Other Types of Users

Users

Trunking

Amateur Radio

Cellular

Auxiliary Tower Modification Costs

Tower

Section	Question	Response
Engineering Study	Please what type of engineering study is required, if any:	Study needed for documented tower
Tower Reinforcements	Please select whether tower reinforcements are needed:	Minor Reinforcements needed

Auxiliary Tower	Tower Rigging Costs			
	Section	Question	Response	
	Tower Rigging Costs	Complex Tower	N/A	
	Helicopter Services Required	Are helicopter services required?	No	

Auxiliary Other Tower Expenses Not Listed

AuxiliaryOther Tower ExpensTowerInformation not provided.

Outside Professional	Section	Question	Response
	I Services Costs Outside Project Management Services	Do you require outside project management services?	Yes
		Number of Hours	1500
		Explanation	See attached Budget Justification: Outside Professional Services
	Outside RF consulting Engineering Services	Perform engineering study for new channel assignment and antenna development	Yes
		Prepare engineering section of Form FCC Construction Permit Application	Yes
		For Auxiliary Facility	Yes
		For Main Facility	Yes
		Prepare engineering section of Form FCC License to Cover Application	Yes
		For Auxiliary Facility	Yes
		For Main Facility	Yes
		Prepare request for Special Temporary Authority	Yes
		Quantity	2
		Do you have Distributed Transmission System engineering services?	N/A
		Critical Facility	N/A
		Terrain-Shielded Facility	N/A
	Attorney and Other Outside Consulting Services	Prepare and file Form FCC Construction Permit Application	Yes
		For Auxiliary Facility	Yes
		For Main Facility	Yes

	Prepare and file Form FCC License to Cover Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	1
	NEPA Section 106 environmental review	No
	Environmental Assessment	No
	ASR Modification	No
	FAA Consultation (including preparation of FAA Form 7460)	No
	Negotiation of Lease and other Matter for Shared Locations	Yes
	Prepare or Review FCC Form 399 for Reimbursement	Yes
	Address transition timing and coordination issues w/ other stations and wireless providers	Yes
RF Field Engineering Services	Comprehensive coverage verification via field study	Yes
	RF exposure measurements	Yes
	Additional Field Engineering Service	No
	Number of Days	N/A
	Justification	N/A

Outside	Other Professional Services Expenses Not Listed		
Professional	I Services Costs	Description	
	Channel change	Engineering services to evaluate coverage and interference moving channel from 14 to 31.	

Progress Reporting	Prepare and file 7 required progress reports on FCC Form 2100, Schedule 387 on a quarterly basis with the FCC.
Site Visits and Surveys	Site visits to establish what equipment is on premises, where new equipment will be located and do equipment inventory for both main and auxiliary sites.
Architect and Engineering services	Planning and layout of new equipment to be installed at main and aux transmitter sites.

Other	Section	Question	Response
Expenses	AM Pattern Disturbance	Is an Impact Study needed?	No
		Is Remediation needed?	No
	Facility Expenses	Name	N/A
		Other Distributed Transmission System Expenses Not listed	N/A
		Name	N/A
		Is Notification of a Medical Facility required as a result of DTV broadcasting?	Yes
Permit and Filir	Permit and Filing Costs	Local Zoning	No
		Non-zoning permits	Yes
		BLM or NFS Coordination	No
		FCC Construction Permit Minor Change	No
		FCC License to Cover Application	No
		FCC Special Temporary Authority Application	Yes
	Other Miscellaneous Expenses	Does this relocation require paying Disposal Costs (for equipment and other waste, net of any salvage value)?	Yes
		Does this relocation require Equipment Delivery or Handling Charges not otherwise included in individual item costs?	Yes
		Does this relocation require Equipment Storage?	Yes
		Does this relocation require the Development and Airing of an Announcement regarding an upcoming channel change?	Yes
		Does this relocation require MVPD Notification of a Channel Change?	Yes

Other Expenses Not Listed

Other	Other Expenses Not Listed		
Expenses	Name	Description	
	Additional Legal Expenses for Repack	Legal work related to WETA repack and reimbursement, including advice on FCC rules, regulations and policies, required FCC filings, reimbursement rules and procedures, and coordination of repack efforts with other site users at multi-party tower site.	

Transmitters

Cost Information

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Act Jus
Primary Transmitter ULXTE-90	\$2,329,335.00	\$2,276,957.00		\$42,315.00	
Other Building Addition Size: 1000.0	\$126,590.00	\$126,590.00	Includes drawing and 3-D laser imaging for initial planning purposes (\$26,590). Includes estimate for structure to be constructed on roof to support transmitter heat exchangers (\$100,000).	\$22,590.00	
50 Ton system	\$266,000.00	\$253,000.00	N/A	N/A	
4" Rigid Conduit and Wiring (Cost per foot)	\$42,420.00	\$40,320.00	N/A	N/A	
Transformer 3 phase /480v - 500 KVA	\$48,400.00	\$46,000.00	N/A	N/A	
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	N/A	N/A	
UHF - Liquid Cooled Solid State Transmitter 52 - 61 kW	\$1,788,000.00	\$1,755,022.00	See attached quote. NOTE: Quote shows cost of both main and auxiliary transmitters. See revised narrative.	N/A	
Pre- installation survey	\$19,725.00	\$19,725.00	Pre-installation survey by GatesAir to determine requirements for transmitter installation.	\$19,725.00	

Auxiliary Transmitter ULXTE-20	\$558,500.00	\$64,000.00		\$358,689.76
Other Electrical Service: Electrical contractor to connect transmitter into existing electrical panel and wire heat exchanger into transmitter. Includes material and labor.	\$14,000.00	\$14,000.00	Electrical contractor to connect transmitter into existing electrical panel and wire heat exchanger into transmitter. Includes material and labor.	N/A
Other Building Addition Size: 600.0	\$50,000.00	\$50,000.00	See revised narrative. Remodeling needed to accommodate new transmitter and filter while current transmitter remains operational.	N/A
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	\$494,500.00	\$0.00	This is an off-site backup to replace what is currently in use. Removed. See narrative weta_budget_rev_070918. pdf.	\$358,689.76
Auxiliary Transmitter ULXTE-90	\$1,830,420.00	\$1,795,342.00		\$0.00
UHF - Liquid Cooled Solid State Transmitter 52 - 61 kW	\$1,788,000.00	\$1,755,022.00	See attached quote. NOTE: Quote shows cost of both main and auxiliary transmitters. See revised narrative.	N/A

4" Rigid Conduit and Wiring (Cost per foot)	\$42,420.00	\$40,320.00	N/A	N/A
Sub-total	\$4,718,255.00	\$4,136,299.00	N/A	\$401,004.76
Total for all systems	\$5,988,245.00	\$5,467,057.50	N/A	\$562,723.14

Actual Information Description	File Name	
Other Building Addition Size: 1000.0	Component Description: Amount:	Item A - Drawing and 3D laser imaging for planning purposes \$22,590.00
50 Ton system	Information not provided.	
4" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	
Transformer 3 phase/480v - 500 KVA	Information not provided.	
Switchgear - industrial 800 amp	Information not provided.	
UHF - Liquid Cooled Solid State Transmitter 52 - 61 kW	Information not provided.	
Pre-installation survey		
	Component Description: Amount:	Site survey to determine site conditions, materials and components required for system installation \$19,725.00

Other Electrical Service: Electrical contractor to connect transmitter into existing electrical panel and wire heat exchanger into transmitter. Includes material and labor.	Information not provided.	
Other Building Addition Size: 600.0	Information not provided.	
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	Component Description: Amount:	Replace existing auxiliary transmitter with channel 31 transmitter \$358,689.76
UHF - Liquid Cooled Solid State Transmitter 52 - 61 kW	Information not provided.	
4" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	

Antennas

Cost Information

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

					_
Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actu Justi
Primary Antenna TUP-04-12-2	\$90,930.00	\$129,039.50		\$0.00	
New combiner, cost per channel (without antenna)	\$84,200.00	\$122,639.50	WETA Share of a 3 channel combiner. See attached revised narrative: COMBINER as to the overage from catalog cost per station and cost breakout.	N/A	ſ
UHF - High Power Top Mount Three Station broadband panel antenna horizontally polarized	\$0.00	\$0.00	N/A	N/A	I
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	I
Auxiliary Antenna TFU-WB	\$211,060.00	\$63,491.00		\$0.00	
Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	\$5,260.00	\$4,050.00	Revised. See narrative weta_budget_rev_070918. pdf.	N/A	I

Elbow complex, single channel, at antenna input, per 4 1/16. feedline (if needed)	\$9,570.00	\$8,116.00	See narrative weta_budget_rev_070918. pdf	N/A	I
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	I
UHF - Lower Power Side Mount, One station - 200-500 kW, horizontally polarized	\$189,500.00	\$44,925.00	See narrative weta_budget_rev_070918. pdf.	N/A	1
Sub-total	\$301,990.00	\$192,530.50	N/A	\$0.00	I
Total for all systems	\$5,988,245.00	\$5,467,057.50	N/A	\$562,723.14	I

Transmission Line

Cost Information

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description Primary Transmission Line	Predetermined Cost Estimate \$49,340.00	Estimated Cost \$47,640.00	Estimated Cost Justification	Actual Cost \$0.00	Actual Cost Justification
Installation	\$15,000.00	\$15,000.00	Estimated replacement to install new 6-1/8" line and remove old 3-1/8" line.	N/A	N/A
Rigid Transmission Line - copper, 6 1/8"	\$34,340.00	\$32,640.00	N/A	N/A	N/A
Auxiliary Transmission Line	\$78,100.00	\$83,058.00		\$0.00	
Rigid Transmission Line - copper, 4 1 /16"	\$78,100.00	\$83,058.00	See narrative 070918.pdf.	N/A	N/A
Sub-total	\$127,440.00	\$130,698.00	N/A	\$0.00	N/A
Total for all systems	\$5,988,245.00	\$5,467,057.50	N/A	\$562,723.14	N/A

Components

Tower Equipment and Rigging Costs

Cost Information

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Auxiliary Tower LTOWER	\$254,800.00	\$192,000.00		\$0.00	
Short Tower (less than 500')	\$84,200.00	\$80,000.00	N/A	N/A	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$100,000.00	N/A	N/A	N/A
Structural engineering tower load study for well documented tower	\$12,600.00	\$12,000.00	N/A	N/A	N/A
Sub-total	\$254,800.00	\$192,000.00	N/A	\$0.00	N/A
Total for all systems	\$5,988,245.00	\$5,467,057.50	N/A	\$562,723.14	N/A

Components

Outside Professional Services

Cost Information

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justificatior
Outside Professional Services	\$514,615.00	\$748,750.00		\$161,718.38	
Progress Reporting	\$14,000.00	\$14,000.00	Prepare and file 7 required progress reports on FCC Form 2100, Schedule 387 on a quarterly basis with the FCC.	\$1,226.55	N/A
Attorney Fees - Negotiation of lease and other matters for shared locations	\$4,210.00	\$175,000.00	Fees related to multi-party resolution agreement between 3 parties to accommodate WETA moving from ch 14 to 31, 100,000. Lease mod negotiations for main ant /combiner and bldg. permit app., 50,000. Aux site apps and hearings for bldg expansion 25,000.	\$81,219.93	N/A

Architect and Engineering services	\$19,500.00	\$19,500.00	Planning and layout of new equipment to be installed at main and aux transmitter sites.	N/A	N/A
Site Visits and Surveys	\$9,000.00	\$9,000.00	Site visits to establish what equipment is on premises, where new equipment will be located and do equipment inventory for both main and auxiliary sites.	N/A	N/A
Channel change	\$85,000.00	\$85,000.00	Engineering services to evaluate coverage and interference moving channel from 14 to 31.	\$53,718.75	N/A
RF Exposure Measurements	\$21,050.00	\$20,000.00	N/A	N/A	N/A
Comprehensive coverage verification via field study, if needed	\$84,200.00	\$100,000.00	\$80,000 for Main transmitter site and \$20,000 for auxiliary site.	N/A	N/A
Attorney Fees - Prepare and File request for Special Temporary Authorization	\$3,680.00	\$7,000.00	The need for filing two STA's in a project of this magnitude is anticipated.	\$0.00	N/A

Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application	\$2,365.00	\$2,250.00	N/A	\$2,511.75	Actuals a marginal higher tha estimate costs
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	\$4,210.00	\$4,000.00	N/A	\$285.60	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	\$5,260.00	\$5,000.00	N/A	N/A	N/A
Prepare request for Special Temporary Authorization	\$4,100.00	\$3,000.00	Two STA's are anticipated, one for the main site and the other for the auxiliary.	\$328.95	N/A
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	\$1,580.00	\$1,500.00	N/A	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	\$1,580.00	\$1,500.00	N/A	N/A	N/A

RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	\$2,105.00	\$3,000.00	Time required will be similar to that required of the main site to prepare this application.	N/A	N/A
Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$45,000.00	Extensive study has already been given to searching for a new channel and Land Mobile interference and remediation with WETA on ch. 14. Additional studies for multi-station resolution had to be performed.	\$5,000.00	N/A
Address transition timing and coordination issues w/ other stations and wireless	\$2,630.00	\$11,000.00	Coordination with 4 TV stations and 3 FM stations. Cut over must be carefully planned with other two stations. Contacting Land Mobile operators on cutover to ensure no interference by WETA	N/A	N/A

Prepare and or review reimbursement form	\$2,630.00	\$15,000.00	This is a complex project and requires careful attention to detail in assembling. Substantial time has been placed into the preparation of the form with supporting justification for both main and auxiliary sites.	\$17,426.85	Actuals are marginally higher than estimated costs.
Project management of the transition	\$237,000.00	\$225,000.00	N/A	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	N/A	N/A
Sub-total	\$514,615.00	\$748,750.00	N/A	\$161,718.38	N/A
Total for all systems	\$5,988,245.00	\$5,467,057.50	N/A	\$562,723.14	N/A

Actual Information	
Description	File Name

Progress Reporting		
	Component Description:	Item G - Preparation of
		progress report
	Amount:	\$47.60
	Component Description:	Item G - Prepare
		progress report
	Amount:	\$893.35
	Component Description:	Item G -
		Preparation and
		submission of
	Amount:	progress reports \$285.60
Attorney Fees - Negotiation		
of lease and other matters for shared locations	Component Description:	Item A -
		Negotiation with
		3rd parties in connection with
		WETA move to Ch.
		31
	Amount:	\$4,700.00
	Component Description:	Item A -
		Negotiation with
		3rd parties for WETA move to Ch.
		31
	Amount:	\$12,350.00
	Component Description:	Item A - Attorney
		fees for discussion
		regarding viability
		of Ch. 14 and
		move to Ch. 31
	Amount:	\$6,822.08

Component Description: Amount:	Item A - Attorney fees related to negotiation of WETA move to Ch. 31 \$17,227.32
Component Description: Amount:	Item A - Attorney fees for various matter relating to channel 14 assignment and channel 31 move \$6,330.80
Component Description: Amount:	Item A - Negotiate with 3rd parties re: move to Ch. 31 and related \$4,093.60
Component Description: Amount:	Negotiating with 3rd parties (interference) for move to Ch. 31 \$476.00
Component Description: Amount:	Item A - Attorney fees for negotiation of move to Channel 31. See attached invoice and items marked as A on page 2 for detail breakout. \$1,190.00
Amount:	breakout.

	Component Description: Amount:	Item A - Attorney fees for exploring and negotiating channel alternatives to Ch. 14 \$5,758.86
	Component Description:	Item A - Attorney fees for exploration and negotiation of Ch. 31 move
	Amount:	\$1,626.47
	Component Description:	Item A - Negotiation of move to Ch. 31 and related issues
	Amount:	\$20,644.80
Architect and Engineering services	Information not provided.	
Site Visits and Surveys	Information not provided.	
Channel change	Component Description:	Item A - Channel 14 issues and alternatives. SFN research options.
	Amount:	\$4,893.75
	Component Description:	Item B - Land Mobile interference and remediation on Ch. 14
	Amount:	\$4,106.25

Component Description: Amount:	Item A - Auction repack analysis related to WETA Ch. 14 \$10,743.75
Component Description:	Item B - Coverage study and interference maps for various scenarios including Ch. 20 SFN option \$2,868.75
Component Description: Amount:	Item C - RF sweep at transmitter site and UHF panel testing for new repack channel \$1,687.50
Component Description: Amount:	Item A - Auction repack analysis for new Ch 14 assignment \$5,850.00
Component Description:	Item B - Repack research issues related to Land Mobile interference on Ch. 14
Amount:	\$20,362.50

	Component Description:	Item A - Develop new channel options with MPT. Extensive work to obtain a multi- resolution agreement between 3 parties for channel changes for 5 stations so WETA could get ch 31. \$2,193.75
	Component Description:	Item B - TV study for alternative channel assignments. WETA originally assigned channel 14. This was an unworkable channel due to numerous Land Mobile stations in DC. Studies we undertaken to find another channel. WETA ultimately found channel 31. \$1,012.50
RF Exposure Measurements	Information not provided.	
Comprehensive coverage verification via field study, if needed	Information not provided.	
Attorney Fees - Prepare and File request for Special Temporary Authorization	Information not provided.	

Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application	Component Description:	Item B - Preparation of construction permi application and
	Amount:	related \$1,618.40
	Component Description:	Item B - Monitor construction permi
	Amount:	application \$190.40
	Component Description:	Item B - Work related to construction permi application
	Amount:	\$476.00
	Component Description:	Item B - Follow-up work related to CP application
	Amount:	\$226.95
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License	Component Description:	Item C - Preparation of CP application for aux
Application	Amount:	site \$285.60
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	Information not provided.	

Prepare request for Special Temporary Authorization	Component Description: Amount:	Item E - Attorney fees related to STA for waiver of repack construction permit app \$328.95
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	Information not provided.	
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	Information not provided.	
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	Information not provided.	
Perform engineering study for new channel assignment and antenna development	Component Description: Amount:	Review of Land mobile interference with WETA on Ch. 14 \$5,000.00
Address transition timing and coordination issues w/ other stations and wireless	Information not provided.	
Prepare and or review reimbursement form	Component Description: Amount:	Item F - Attorney fees for preparation of Form 399 \$952.00

Item F - Attorney fees for educating WETA staff on reimbursement procedures \$95.20
Item F - Attorney fees in preparation of Form 399 \$190.40
Item F - Educate WETA staff on reimbursement procedures and processes \$2,760.80
Item F - Educate WETA staff on reimbursement \$238.00
Item F - Attorney fees for preparation of Form 399 \$2,500.00
Item F - Attorney fees related to preparation of Form 399 \$2,943.55
Item F - Attorney fees related to preparation of Form 399 \$1,643.90

	Component Description:	Item F - Attorney fees for preparatio of Form 399
	Amount:	\$5,807.20
	Component Description:	Item F - Educate WETA staff on reimbursement process & procedure and related
	Amount:	\$295.80
Project management of the transition	Information not provided.	
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	Information not provided.	

Other Expenses

Cost Information

Where no predetermined cost estimate is available, any estimate provided will also become the predetermined cost (displayed in italics).

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual C Justifica
Other Expenses	\$71,145.00	\$66,780.00		\$0.00	
Additional Legal Expenses for Repack	\$0.00	\$0.00	N/A	N/A	N/A
MVPD Notification of Channel Change	\$7,000.00	\$7,000.00	Estimated cost of using outside firm to contact MVPD's regarding channel change to repack channel.	N/A	N/A
Develop and air announcement of upcoming channel change	\$7,500.00	\$7,500.00	Costs for production and airtime of channel change announcements.	N/A	N/A
Equipment Storage	\$10,000.00	\$10,000.00	See attached Budget Justification: FEES AND MISCELLANEOUS EXPENSES	N/A	N/A
Equipment Delivery and Handling Charges	\$28,900.00	\$28,900.00	Estimated freight charges for multiple transmitters and auxiliary antenna not included in quotations for equipment from vendors. See transmitter quotes for those estimates.	N/A	N/A

Disposal Costs (for equipment and other waste, net of any salvage value)	\$1,000.00	\$1,000.00	Some disposal costs are anticipated for old equipment removed from service. This modest amount is proposed for such disposal.	N/A	N/A
Non-zoning permits	\$5,000.00	\$5,000.00	Estimate of building permit costs to modify auxiliary transmitter site and extensive electrical work at main site.	N/A	N/A
FCC Filing Fees - Special Temporary Authorization request	\$195.00	\$380.00	Anticipate needing to file two STA's in a project this complex.	N/A	N/A
DTV Medical Facility Notification	\$11,550.00	\$7,000.00	N/A	N/A	N/A
Sub-total	\$71,145.00	\$66,780.00	N/A	\$0.00	N/A
Total for all systems	\$5,988,245.00	\$5,467,057.50	N/A	\$562,723.14	N/A

Cost Information	Grand Total			
		Predetermined Cost Estimate	Estimated Cost	Actual Cost
	Total for all systems	\$5,988,245.00	\$5,467,057.50	\$562,723.14

Reimbursem	entestiatus	Response
	The facility has ceased operating on its pre- auction channel.	No
	Construction of final facilities or all necessary modifications are complete.	No
	All receipts for reimbursement have been submitted no further costs are expected to be incurred. Note this will lock the Form 399 from further editing and begin close-out procedures with the Fund Administrator.	No

Certification	Section	Question	Response
	Submission of Estimated Expenses Statements	WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT.	
		 The Authorized Person signing below certifies that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. The above-named 	
		entity acknowledges that all certifications and attached documentation are considered material representations.	
		3. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.	

- 4. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster Relocation Fund are necessary to change channels (broadcasters) or to continue to carry the signal of a broadcaster that changes channels (MVPD).
- The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
- 6. The above-named entity certifies that it will maintain and provide to the Commission detailed records, including receipts, of all costs eligible for reimbursement actually incurred.
- 7. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.

8. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a pre-requisite for obtaining the payments herein requested.	
I declare, under penalty of perjury, that I am an authorized representative of the above- named applicant for the Authorization(s) specified above.	Roby Jacob Corporate Controller
	10/01/2018

Attachments