Approved by OMB (Office of Management and Budget) 3060-1178

Federal Communications Commission

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility ID: **65670** | Service: **DTV** | Call Sign: **WETA-TV** | Channel: **31 (UHF)**

File Number: **0000028782**

FRN: **0002107274** | Date Submitted: **06/07/2018**

Applicant Information

Applicant Name, Type, and Contact 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 Information

Reimbursement Contact Name and Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Contact Information

Preparer Contact Name and 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 Information and Transition Plan

Question	Response
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 Transmitter

Add Transmitter Information

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 and Type	Manufacturer	
	Model	DHD15P1
	Year	2003
	Type	Solid State
	Solid State Cooling	Air Cooled
	Solid State Power Capacity	3.6 kW

Auxiliary Transmitter

New Transmitter Costs

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 Cooled
	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 Transmitter

Other Transmitter Costs

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
	Type	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?	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

Auxiliary Transmitter

Other Transmitter Cost Not Listed

Information not provided.

Auxiliary Transmitter

Add Transmitter Information

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 and Type	Manufacturer	
	Model	CD100P1
	Year	1997
	Type	Inductive Output Tube
	IOT Power Type	Single
	Power Capacity	17.5 kW

Auxiliary Transmitter

New Transmitter Costs

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 Transmitter

Other Transmitter Costs

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
	Type	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

Auxiliary Transmitter

Other Transmitter Cost Not Listed

Information not provided.

Primary Transmitter

Existing Transmitter Information

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
	Type	Solid State
	Solid State Cooling	Air Cooled
	Solid State Power Capacity	3.6 kW

Primary Transmitter

New Transmitter Costs

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 Transmitter

Other Transmitter Costs

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
	Type	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

Primary Transmitter

Other Transmitter Cost Not Listed

Name	Description

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

Primary Antenna

Existing Antenna Information

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 Manufacturer and Type	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Top
	Polarization	Horizontal
	Type	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

Primary Antenna

Adjustment to Existing Antenna

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

Primary Antenna

Other Antenna Costs

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	Yes
	Type	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

Primary Antenna

Other Antenna Cost Not Listed

Information not provided.

Auxiliary Antenna

Add Antenna Information

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
	Type	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

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
	Type	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)	20.0 kW
Manufacturer	
Model	TFU-8JSC-RO3
Year	2018
Justification for New Antenna	Current antenna is tuned to channel 27 and cannot be retuned to operate on channel 31.

Auxiliary Antenna

Other Antenna Costs

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	No
	Type	
	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	3 1/8 inches inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	Yes

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

Auxiliary Antenna

Other Antenna Cost Not Listed

Information not provided.

Transmission Line

Section	Question	Response
Transmission Line Related Expenses	Do you have transmission line related expenses?	Yes

Auxiliary Transmission Line

Add Transmission Line

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	
	Type	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

Auxiliary Transmission Line

New Transmission Line

Section	Question	Response
New Transmission Line Costs	Use	Auxiliary (Backup)
	Description of Use	Off site backup
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Type	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	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.

Auxiliary Transmission Line

Other Transmission Line Expenses Not Listed

Information not provided.

Primary Transmission Line

Add Transmission 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 Line Manufacturer and Type	Manufacturer	
	Type	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 Transmission Line

New Transmission 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
	Type	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 Transmission Line

Other Transmission Line Expenses Not Listed

Name	Description
Installation	Estimated removal of current line and installation of new. installation

Tower Equipment And Rigging Costs

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

Auxiliary Tower

Add Tower

Section	Question	Response
Existing Tower Description	Type of change	Modify Existing
	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 (NAD83 (North American Datum of 1983))	Latitude (NAD83)	38° 53' 30.0" N-
	Longitude (NAD83)	077° 07' 54.0" W-
	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
12460	WGTS	FM
4644	WAVA-FM	FM
65669	WETA	FM

Other Types of Users

Users
Cellular
Amateur Radio
Trunking

Auxiliary Tower

Tower Modification Costs

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 Tower

Other Tower Expenses Not Listed

Information not provided.

Outside Professional Services Costs

Section	Question	Response
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 Professional Services Costs

Other Professional Services Expenses Not Listed

Name	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 Expenses

Section	Question	Response
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 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

Other Expenses Not Listed

Information not provided.

Cost Information

Transmitters

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
Primary Transmitter ULXTE-90	**$2,329,335.00**	**$2,276,957.00**		**$42,315.00**	
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	N/A
Switchgear - industrial 800 amp	$38,200.00	$36,300.00	N/A	N/A	N/A
Transformer 3 phase /480v - 500 KVA	$48,400.00	$46,000.00	N/A	N/A	N/A
4" Rigid Conduit and Wiring (Cost per foot)	$42,420.00	$40,320.00	N/A	N/A	N/A
50 Ton system	$266,000.00	$253,000.00	N/A	N/A	N/A

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	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	N/A
Auxiliary Transmitter ULXTE-90	**$1,830,420.00**	**$1,795,342.00**		**$0.00**	
4" Rigid Conduit and Wiring (Cost per foot)	$42,420.00	$40,320.00	N/A	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	N/A

Auxiliary Transmitter ULXTE-20	**$558,500.00**	**$531,202.54**		**$0.00**	
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	N/A
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	N/A
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	$494,500.00	$467,202.54	This is an off-site backup to replace what is currently in use.	N/A	N/A
Sub-total	$4,718,255.00	$4,603,501.54	N/A	$42,315.00	N/A
Total for all systems	$5,884,025.00	$5,967,961.04	N/A	$204,033.38	N/A

Components

Actual Information Description	File Name	
UHF - Liquid Cooled Solid State Transmitter 52 - 61 kW	Information not provided.	
Switchgear - industrial 800 amp	Information not provided.	
Transformer 3 phase/480v - 500 KVA	Information not provided.	
4" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	
50 Ton system	Information not provided.	
Other -- Building Addition Size: 1000.0	**Component Description:** **Amount:**	Item A - Drawing and 3D laser imaging for planning purposes $22,590.00
Pre-installation survey	**Component Description:** **Amount:**	Site survey to determine site conditions, materials and components required for system installation $19,725.00
4" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	
UHF - Liquid Cooled Solid State Transmitter 52 - 61 kW	Information not provided.	
Other -- Building Addition Size: 600.0	Information not provided.	

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.
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	Information not provided.

Cost Information

Antennas

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
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	N/A
Sweep test of existing antenna	$6,730.00	$6,400.00	N/A	N/A	N/A
UHF - High Power Top Mount Three Station broadband panel antenna horizontally polarized	***$0.00***	$0.00	N/A	N/A	N/A
Auxiliary Antenna TFU-8JSC-RO3	**$127,740.00**	**$125,800.00**		**$0.00**	

Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	$5,260.00	$5,000.00	N/A	N/A	N/A
Side mount brackets for high power antennas (if not included in antenna base cost)	$23,150.00	$22,000.00	N/A	N/A	N/A
Elbow complex, single channel, at antenna input, per 3 1/8. feedline (if needed)	$7,600.00	$7,400.00	N/A	N/A	N/A
Sweep test of existing antenna	$6,730.00	$6,400.00	N/A	N/A	N/A
UHF - High Power, Side Mount, basic slot antenna, 20 kW input, horizontally polarized	***$85,000.00***	$85,000.00	Catalog cost estimate to replace aux ch. 27 antenna with one for ch. 31.	N/A	N/A
Sub-total	$218,670.00	$254,839.50	N/A	$0.00	N/A

Total for all systems	$5,884,025.00	$5,967,961.04	N/A	$204,033.38	N/A

Components

Information not provided.

Cost Information

Transmission Line

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
Primary Transmission Line	**$49,340.00**	**$47,640.00**		**$0.00**	
Rigid Transmission Line - copper, 6 1/8"	$34,340.00	$32,640.00	N/A	N/A	N/A
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
Auxiliary Transmission Line	**$57,200.00**	**$54,450.00**		**$0.00**	
Rigid Transmission Line - copper, 3 1/8"	$57,200.00	$54,450.00	N/A	N/A	N/A
Sub-total	$106,540.00	$102,090.00	N/A	$0.00	N/A
Total for all systems	$5,884,025.00	$5,967,961.04	N/A	$204,033.38	N/A

Components

Information not provided.

Cost Information

Tower Equipment and Rigging Costs

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	$5,884,025.00	$5,967,961.04	N/A	$204,033.38	N/A

Components

Information not provided.

Cost Information

Outside Professional Services

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
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.

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
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 are marginally higher than estimates costs
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
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

Prepare engineering section of FCC Form 2100 (main), License to Cover Application	$1,580.00	$1,500.00	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
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

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
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
Project management of the transition	$237,000.00	$225,000.00	N/A	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
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

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
Sub-total	$514,615.00	$748,750.00	N/A	$161,718.38	N/A
Total for all systems	$5,884,025.00	$5,967,961.04	N/A	$204,033.38	N/A

Components

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 progress reports **Amount:** $285.60
Prepare and or review reimbursement form	

Component Description:	Item F - Educate WETA staff on reimbursement process & procedure and related
Amount:	$295.80
Component Description:	Item F - Attorney fees for preparation of Form 399
Amount:	$2,500.00
Component Description:	Item F - Educate WETA staff on reimbursement procedures and processes
Amount:	$2,760.80
Component Description:	Item F - Educate WETA staff on reimbursement
Amount:	$238.00
Component Description:	Item F - Attorney fees for preparation of Form 399
Amount:	$952.00
Component Description:	Item F - Attorney fees for educating WETA staff on reimbursement procedures
Amount:	$95.20

	Component Description:	Item F - Attorney fees for preparation of Form 399
	Amount:	$5,807.20
	Component Description:	Item F - Attorney fees related to preparation of Form 399
	Amount:	$1,643.90
	Component Description:	Item F - Attorney fees related to preparation of Form 399
	Amount:	$2,943.55
	Component Description:	Item F - Attorney fees in preparation of Form 399
	Amount:	$190.40
Attorney Fees - Negotiation of lease and other matters for shared locations	**Component Description:**	Negotiating with 3rd parties (interference) for move to Ch. 31
	Amount:	$476.00
	Component Description:	Item A - Negotiate with 3rd parties re: move to Ch. 31 and related
	Amount:	$4,093.60

Component Description:	Item A - Negotiation with 3rd parties for WETA move to Ch. 31
Amount:	$12,350.00
Component Description:	Item A - Attorney fees related to negotiation of WETA move to Ch. 31
Amount:	$17,227.32
Component Description:	Item A - Attorney fees for discussion regarding viability of Ch. 14 and move to Ch. 31
Amount:	$6,822.08
Component Description:	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.
Amount:	$1,190.00
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 of move to Ch. 31 and related issues
Amount:	$20,644.80
Component Description:	Item A - Attorney fees for exploration and negotiation of Ch. 31 move
Amount:	$1,626.47
Component Description:	Item A - Attorney fees for exploring and negotiating channel alternatives to Ch. 14
Amount:	$5,758.86
Component Description:	Item A - Attorney fees for various matter relating to channel 14 assignment and channel 31 move
Amount:	$6,330.80

Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application	**Component Description:** **Amount:**	Item B - Work related to construction permit application $476.00
	Component Description: **Amount:**	Item B - Preparation of construction permit application and related $1,618.40
	Component Description: **Amount:**	Item B - Follow-up work related to CP application $226.95
	Component Description: **Amount:**	Item B - Monitor construction permit application $190.40
Architect and Engineering services	Information not provided.	
Site Visits and Surveys	Information not provided.	
Channel change	**Component Description:** **Amount:**	Item A - Auction repack analysis related to WETA Ch. 14 $10,743.75

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.
Amount:	$1,012.50
Component Description:	Item A - Channel 14 issues and alternatives. SFN research options.
Amount:	$4,893.75
Component Description:	Item C - RF sweep at transmitter site and UHF panel testing for new repack channel
Amount:	$1,687.50
Component Description:	Item B - Coverage study and interference maps for various scenarios including Ch. 20 SFN option
Amount:	$2,868.75

	Component Description: **Amount:**	Item B - Land Mobile interference and remediation on Ch. 14 $4,106.25
	Component Description: **Amount:**	Item A - Auction repack analysis for new Ch 14 assignment $5,850.00
	Component Description: **Amount:**	Item B - Repack research issues related to Land Mobile interference on Ch. 14 $20,362.50
	Component Description: **Amount:**	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
RF Exposure Measurements	Information not provided.	
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	**Component Description:** **Amount:**	Item C - Preparation of CP application for aux 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
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	Information not provided.	
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	Information not provided.	
Address transition timing and coordination issues w/ other stations and wireless	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
Comprehensive coverage verification via field study, if needed	Information not provided.	
Project management of the transition	Information not provided.	
Attorney Fees - Prepare and File request for Special Temporary Authorization	Information not provided.	

RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, 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.

Cost Information

Other Expenses

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**	
Equipment Storage	***$10,000.00***	$10,000.00	See attached Budget Justification: FEES AND MISCELLANEOUS EXPENSES	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
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 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
DTV Medical Facility Notification	$11,550.00	$7,000.00	N/A	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
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
Sub-total	$71,145.00	$66,780.00	N/A	$0.00	N/A
Total for all systems	$5,884,025.00	$5,967,961.04	N/A	$204,033.38	N/A

Components

Information not provided.

Cost Information

Grand Total

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	$5,884,025.00	$5,967,961.04	$204,033.38

Reimbursement Status

Question	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.	
	1. 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. 2. 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).
5. 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 Chacko Jacob** *Corporate Controller* 06/07/2018

Certification

Section	Question	Response
Submission of Actual Cost Documentation Statements	WILLFUL FALSE, FRAUDULENT, OR FICTITIOUS STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISIONMENT (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 AND/OR FRAUDULENT STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT (U.S. CODE, TITLE 31, SECTIONS 3729-3733).	
	1. The Authorized Person signing below certifies and represents that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. 2. The above-named entity certifies that the statements in this form and attached documentation are true, complete, and correct. 3. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.	

4. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.
5. 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 (full power and Class A stations) and/or otherwise modify a television station’s facility as a result of the spectrum repack (LPTV/TV Translator stations); or to minimize service disruption resulting from a repacked television station (FM stations); or to continue to carry the signal of a broadcaster that changes channels (MVPD) .
6. 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.
7. The above-named entity certifies that the cost information /documents submitted reflect costs actually incurred.

	8. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission. 9. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a prerequisite 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 Chacko Jacob** *Corporate Controller* 06/07/2018

Attachments