



(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility **72098** | Service: **DTV** | Call **WGBX-TV** | Channel: **43 (UHF)** |
ID:
File **0000028580**
Number:
FRN: **0003764560** | Date **09/14**
Submitted: **/2017**

Applicant Information

Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
WGBH EDUCATIONAL FOUNDATION Doing Business As: WGBH EDUCATIONAL FOUNDATION	Eric Brass 1 Guest Street Boston, MA 02135 United States	+1 (617) 300-4405	ERIC_BRASS@WGBH.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
Emeric Feldmar <i>Director of Engineering</i> <i>WGBH Educational Foundation</i>	Emeric Feldmar 1 Guest Street Boston, MA 02135 United States	+1 (617) 300-2371	emeric_feldmar@wgbh.org

**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	WGBX will operate on Ch. 43 from an interim site for 10-12 mos. while extensive tower work is conducted and then resume operations on Ch. 32 at its original tower. After the transition, WGBX will retune its interim transmitter to replace its existing aux.

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	Retune Existing
	Use	Auxiliary (Backup)
	Ownership	Owned
	Owner	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	Harris

Model	Ranger CZ1000L
Year	2011
Type	Solid State
Solid State Cooling	Air Cooled
Solid State Power capacity	1 kW

Auxiliary Transmitter

Retuning Transmitter Costs

Section	Question	Response
New IOT Tubes	Number of Tubes (including accessories) needed	N/A
New Mask Filter	Power	30 kW
	Other Power	N/A
New Exciter	Is a new exciter needed?	No

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	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 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

Auxiliary Transmitter **Other Transmitter Cost Not Listed**
Information not provided.

**Primary
Transmitter**

Add 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	Millennium CTT-U- DCX-1H
	Year	2001
	Type	Inductive Output Tube
	IOT Power Type	Single
	Power Capacity	22.3 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-80
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	25.3 kW
	Justification for New Transmitter	See attachment "Transmitter Justification"

**Primary
Transmitter**

Other Transmitter Costs

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	No
	Switchgear (industrial 800 amp)	No
	Transformer (480V)	Yes
	Power	300 kVA
	Rigid Conduit and Wiring	No
	Size	N/A
	Length	N/A
	Other Electrical Service	Yes

	Description	Conduit and wiring material and labor costs required for new transmitter.
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 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

Primary Transmitter **Other Transmitter Cost Not Listed**

Name	Description
RF Monitor	RF Monitor System

**Interim
Transmitter**

New Transmitter Costs

Section	Question	Response
New Transmitter	Use	Interim
	Description of Use	N/A
	Change Type	Purchase
	Manufacturer	
	Model	ULXTE-60
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	35 kW
	Justification for New Transmitter	Transitional site required to maintain full power operations during the 10-12 months while a reinforcement and new combiner system are installed on the existing tower.

**Interim
Transmitter**

Other Transmitter Costs

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	Yes
	Switchgear (industrial 800 amp)	Yes
	Transformer (480V)	Yes
	Power	300 kVA
	Rigid Conduit and Wiring	Yes

	Size	4 inches
	Length	150.0 feet
	Other Electrical Service	No
	Description	N/A
HVAC Service	Does the replacement transmitter require HVAC Service?	Yes
	Type	Cooling Only
	Size	20 tons
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leasehold improvement?	Yes
	Size	250.0 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
Inside RF System	Is an additional interior RF system required to support this interim transmitter?	Yes

Interim Transmitter

Other Transmitter Cost Not Listed

Name	Description
Microwave Link to Interim Site	Link from studio to interim transmitter site
RF Monitoring	RF monitoring system

Antennas

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

**Primary
Antenna**

Add Antenna Information

Section	Question	Response
Existing Antenna Description	Type of change	Lease New
	Antenna Use	Primary (Main)
	Description of Use	N/A
	Ownership	Leased
	Owner	American Tower
	Site	N/A
	Is this antenna currently shared with any other stations?	Yes
	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	Top Mount
	Antenna position in stack	Bottom
	Polarization	Horizontal
	Type	Broadband Panel
	Number of Stations Supported	5
	Number of Panels	24
	Design power capacity in use	87.1 %
	Lower Limit	500.00 MHz
	Upper Limit	660.00 MHz
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	625.0 kW

	Manufacturer	
	Model	TAD24UDA-5-60MR
	Year	2001

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

Facility ID	Call Sign
72099	WGBH-TV
73982	WSBK-TV
25456	WBZ-TV
65684	WCVB-TV

**Primary
Antenna**

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Primary (Main)
	Description of Use	N/A
	Change Type	Lease New
	Is this a request for upgraded equipment?	Yes
	Ownership	Leased
	Owner	American Tower
	Is antenna shared?	Yes
	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	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Circular
	Type	Broadband Panel
	Number of Stations Supported	4
	Number of Panels/Bays	14
	Lower Limit	470.00 MHz
	Upper Limit	698.00 MHz
	Design power capacity in use	85.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	500.0 kW
	Manufacturer	

Model	TUM-AP-04-14/56-2-T
Year	2018
Justification for New Antenna	Existing antenna not usable at new channel assignments

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	4
	Frequencies of channels supported	RF channel
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	No
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	Broadband
	Feed Line Size	7 3/16 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?	No
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Enter a list of RF channel numbers.

RF Channel Number
20
21
32
33

Primary
Antenna

Other Antenna Cost Not Listed

Name	Description
Combiner Installation	Installation and commission of combiner system. See ATC quotation.

**Interim
Antenna**

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Interim
	Description of Use	N/A
	Change Type	Purchase New
	Ownership	Leased
	Owner	American Tower
	Is antenna shared?	Yes
	Is antenna directional?	Yes
	Will antenna be located on or in close proximity to an antenna farm?	No
New Antenna Manufacturer and Type	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Bottom
	Polarization	Elliptical
	Type	Broadband Panel
	Number of Stations Supported	4
	Number of Panels/Bays	14
	Lower Limit	470.00 MHz
	Upper Limit	608.00 MHz
	Design power capacity in use	85.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	200.0 kW
	Manufacturer	
	Model	TUM-AP-04- 14/56-2-B

Year	2018
Justification for New Antenna	Interim antenna required for transitional site during the 10-12 months while a reinforcement and new combiner system are installed on the existing tower.

Interim 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	4
	Frequencies of channels supported	RF channel
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	No
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	B
	Feed Line Size	7 3/16 inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for an antenna?	No
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No

Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes
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Enter a list of RF channel numbers.

RF Channel Number
33
20
21
32

Interim
Antenna

Other Antenna Cost Not Listed

Name	Description
Combiner Installation	WGBX shared expense of installation, testing and commissioning of combiner

Transmission Line

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

Primary Transmission Line**Existing Transmission Line**

Section	Question	Response
Existing Transmission Line Description	Type of change	Utilize Existing
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Leased
	Owner	American Tower
	Site	N/A
	Is the existing transmission line shared with another station or stations?	Yes
	Is Transmission Line in operating condition?	Yes
Existing Transmission Line Manufacturer and Type	Manufacturer	Dielectric
	Type	Rigid
	Diameter	8 3/16 inches
	Other Diameter	N/A
	Segment Length	Broadband
	Other Segment Length	N/A
	Number of parallel runs	3
	Length	1469 feet per run

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

Facility ID	Call Sign
72099	WGBH-TV
25456	WBZ-TV
65684	WCVB-TV
73982	WSBK-TV

Primary Transmission Line

Other Transmission Line Expenses Not Listed

Name	Description
Transmission line refurbish	Refurbish existing transmission lines per ATC.

Interim Transmission Line

New Transmission Line

Section	Question	Response
New Transmission Line Costs	Use	Interim
	Description of Use	N/A
	Change Type	Lease New
	Type	Rigid
	Diameter	7 3/16 inches
	Segment Length	Broadband
	Other Segment Length	
	Number of parallel runs	2
	Length	1250 feet per run
	Justification for New Transmission Line	Interim site requires transmission line to

	accommodate interim antenna.
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Interim Transmission Line	Other Transmission Line Expenses Not Listed
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Information not provided.

**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	Interim Tower
	Ownership	Leased
	Is this tower consider Complex?	Candelabra
	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	No
	Is tower documented for structural analysis?	Yes
	Is tower compliant with Rev G?	Unknown
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1004233
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	42° 18' 10.7" N-
	Longitude (NAD83)	071° 13' 04.9" W-
	Overall Structure Height	1200.77 feet
	Support Structure Height	1101.04 feet
	Ground Elevation Above Mean Sea Level (AMSL)	150.92 feet
	Structure Type	GTOWER - Guyed

		Structure Used for Communication Purposes
	Tower Owner	American Towers, LLC
	Date Constructed	04/19/2005

**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
6463	WFXT	DTV
9639	WODS	FM
73238	WLVI	DTV
13806	WZLX	FM
1901	WBZ-FM	FM
49385	WXRV	FM
26897	WBMX	FM

**Auxiliary
Tower**

Tower Modification Costs

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

**Auxiliary
Tower**

Tower Rigging Costs

Section	Question	Response
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Tower Rigging Costs	Complex Tower	Candelabra
Helicopter Services Required	Are helicopter services required?	No

**Auxiliary
Tower**

Other Tower Expenses Not Listed

Name	Description
Tower Permits	Permits

Primary Tower

Existing Tower

Section	Question	Response
Existing Tower Description	Type of change	Modify Existing
	Tower Use	Primary (Main)
	Description of Use	N/A
	Ownership	Leased
	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	No
	Is tower documented for structural analysis?	Yes
	Is tower compliant with Rev G?	Yes
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1003433
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	42° 18' 37.0" N-
	Longitude (NAD83)	071° 14' 12.0" W-
	Overall Structure Height	1296.24 feet
	Support Structure Height	1192.24 feet
	Ground Elevation Above Mean Sea Level (AMSL)	152.89 feet
	Structure Type	GTOWER - Guyed Structure Used for Communication Purposes
	Tower Owner	American Tower, LLC
	Date Constructed	01/01/1957

**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
73982	WSBK-TV	DTV
72099	WGBH-TV	DTV
10542	WKLB-FM	FM
25456	WBZ-TV	DTV
68241	WBUR-FM	FM
65684	WCVB-TV	DTV

**Primary
Tower**

Tower Modification Costs

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

**Primary
Tower**

Tower Rigging Costs

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

Primary
Tower

Other Tower Expenses Not Listed

Name	Description
Tower Permit Package	Generation of a construction drawing package per ATC quote

**Outside
Professional Services Costs**

Section	Question	Response
Outside Project Management Services	Do you require outside project management services?	Yes
	Number of Hours	95
	Explanation	American Tower (ATC) outside project management required to coordinate WGBX w multiple broadcasters including interim move to second tower with shared antenna and related infrastructure
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	No
	For Main Facility	Yes
	Prepare engineering section of Form FCC License to Cover Application	Yes
	For Auxiliary Facility	No
	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	No
	For Main Facility	Yes
	Prepare and file Form FCC License to Cover Application	Yes
	For Auxiliary Facility	No
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	2
	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	No
	Additional Field Engineering Service	No
	Number of Days	N/A
	Justification	N/A

Outside Other Professional Services Expenses Not Listed
Professional Services Costs Services not provided.

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	Yes
	Non-zoning permits	Yes
	BLM or NFS Coordination	No
	FCC Construction Permit Minor Change	Yes
	FCC License to Cover Application	Yes
	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

Name	Description
RF System Commission	Testing of the combiner system for optimal transmission patterns per ATC documentation
Site coordination meetings	Site coordination with broadcasters, contractors and vendors involved with the site deliveries and construction. Per attached ATC documentation
Pre planning survey and engineering	Site and transmitter building drawings.

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
Interim Transmitter ULXTE-60	\$1,915,139.40	\$1,399,109.93		\$0.00	
RF Monitoring	<i>\$22,000.00</i>	\$22,000.00	N/A	N/A	N/A
UHF - Liquid Cooled Solid State Transmitter 35 - 50 kW	\$1,473,000.00	\$1,025,420.53	N/A	N/A	N/A
Switchgear - industrial 800 amp	\$38,200.00	\$7,260.00	N/A	N/A	N/A
Service entrance 3 phase/800 amp/208 volt	\$14,400.00	\$2,740.00	N/A	N/A	N/A
Transformer 3 phase/480v - 300 KVA	\$36,800.00	\$19,200.00	Includes costs for transformer and new electrical panels per ATC quote.	N/A	N/A
4" Rigid Conduit and Wiring (Cost per foot)	\$15,150.00	\$14,400.00	200' of 2" conduit @\$25 /ft 100' of 4" conduit @\$96 /ft	N/A	N/A
Other -- HVAC Service Type: C Size: 20 (Other)	<i>\$22,000.00</i>	\$22,000.00	N/A	N/A	N/A
Other -- Building	<i>\$26,800.00</i>	\$26,800.00	Includes Ice shield and	N/A	N/A

Addition Size: 250.0			permitting per ATC quote.		
UHF inside RF system including switching	\$147,500.00	\$140,000.00	N/A	N/A	N/A
Microwave Link to Interim Site	\$119,289.40	\$119,289.40	Per attached quote from Vislink.	N/A	N/A
Primary Transmitter ULXTE-80	\$1,035,800.00	\$1,629,535.00		\$0.00	
RF Monitor	\$22,000.00	\$22,000.00	N/A	N/A	N/A
Other Electrical Service: Conduit and wiring material and labor costs required for new transmitter.	\$30,000.00	\$30,000.00	N/A	N/A	N/A
Transformer 3 phase/480v - 300 KVA	\$36,800.00	\$30,000.00	N/A	N/A	N/A
UHF - Liquid Cooled Solid State Transmitter 21 - 31 kW	\$947,000.00	\$1,547,535.00	Cost includes upgrade to include V- Pol. Reimbursable amount: \$795,494.63.	\$0.00	N/A
Auxiliary Transmitter Ranger CZ1000L	\$137,800.00	\$44,131.25		\$0.00	
UHF and VHF - minor banding issues	\$105,200.00	\$14,131.25	Existing backup transmitter cannot be retuned. Estimate is for retuning interim	N/A	N/A

			transmitter for post- transition channel, which is less expensive than replacing existing backup transmitter.		
30 kW mask filter	\$32,600.00	\$30,000.00	Existing backup transmitter cannot be retuned. Estimate is for retuning interim transmitter for post- transition channel, which is less expensive than replacing existing backup transmitter.	N/A	N/A
Sub-total	\$3,088,739.40	\$3,072,776.18	N/A	\$0.00	N/A
Total for all systems	\$7,600,049.40	\$4,116,963.18	N/A	\$0.00	N/A

Components

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
Interim Antenna TUM-AP-04-14 /56-2-B	\$1,204,780.00	\$173,679.00		\$0.00	
Combiner Installation	<i>\$7,000.00</i>	\$7,000.00	N/A	N/A	N/A
New combiner, cost per channel (without antenna)	\$84,200.00	\$67,000.00	N/A	N/A	N/A
UHF - High Power Top Mount (200-1000 kW), Four Station broadband panel antenna, elliptically or circularly polarized	\$1,090,000.00	\$77,279.00	N/A	N/A	N/A
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	N/A
Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)	\$16,850.00	\$16,000.00	N/A	N/A	N/A
Primary Antenna TUM-AP-04-14/56-2-T	\$1,204,780.00	\$254,763.00		\$0.00	
Combiner Installation	<i>\$7,000.00</i>	\$7,000.00	N/A	N/A	N/A
UHF - High Power Top Mount (200-	\$1,090,000.00	\$148,613.00	N/A	N/A	N/A

1000 kW), Four
Station
broadband
panel antenna,
elliptically or
circularly
polarized

Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	N/A
New combiner, cost per channel (without antenna)	\$84,200.00	\$83,750.00	Inclusive of \$8750 installation charge.	N/A	N/A
Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)	\$16,850.00	\$9,000.00	N/A	N/A	N/A
Sub-total	\$2,409,560.00	\$428,442.00	N/A	\$0.00	N/A
Total for all systems	\$7,600,049.40	\$4,116,963.18	N/A	\$0.00	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
Interim Transmission Line	\$832,500.00	\$64,375.00		\$0.00	
Rigid Transmission Line - copper, 7 3/16" broadband	\$832,500.00	\$64,375.00	N/A	N/A	N/A
Primary Transmission Line	\$30,000.00	\$30,000.00		\$0.00	
Transmission line refurbish	<i>\$30,000.00</i>	\$30,000.00	Cost to refurbish two (2) existing 8-3 /16" transmission lines per ATC quote	N/A	N/A
Sub-total	\$862,500.00	\$94,375.00	N/A	\$0.00	N/A
Total for all systems	\$7,600,049.40	\$4,116,963.18	N/A	\$0.00	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 GTOWER	\$608,400.00	\$157,400.00		\$0.00	
Complex Tower (includes, for example, those with candelabras and /or stacked antennas)	\$421,000.00	\$119,000.00	Rigging, testing for asbestos and lead paint, site security, public hearing, and tower rental per attached ATC quote	N/A	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$10,000.00	N/A	N/A	N/A
Structural engineering tower load study for a documented tower with candelabra	\$20,000.00	\$19,000.00	N/A	N/A	N/A
Tower Permits	<i>\$9,400.00</i>	\$9,400.00	Tower permit drawing plus ground & building A&E permit drawing per attached ATC quote	N/A	N/A
Primary Tower GTOWER	\$404,200.00	\$119,900.00		\$0.00	

Tower Permit Package	\$9,400.00	\$9,400.00	Tower permit drawing plus ground & building A&E permit drawing per attached ATC quote	N/A	N/A
Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study	\$26,300.00	\$25,000.00	N/A	N/A	N/A
Tall Tower (greater than 500')	\$210,500.00	\$60,500.00	N/A	N/A	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$25,000.00	N/A	N/A	N/A
Sub-total	\$1,012,600.00	\$277,300.00	N/A	\$0.00	N/A
Total for all systems	\$7,600,049.40	\$4,116,963.18	N/A	\$0.00	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 Justification
Outside Professional Services	\$139,860.00	\$159,470.00		\$0.00	
Comprehensive coverage verification via field study, if needed	\$84,200.00	\$80,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File request for Special Temporary Authorization	\$7,360.00	\$7,000.00	N/A	N/A	N/A
Attorney Fees - Negotiation of lease and other matters for shared locations	\$4,210.00	\$4,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application	\$2,365.00	\$2,250.00	N/A	N/A	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	\$4,100.00	\$3,000.00	N/A	N/A	N/A

Special
Temporary
Authorization

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
Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$7,000.00	N/A	N/A	N/A
Address transition timing and coordination issues w/ other stations and wireless	\$2,630.00	\$6,260.00	Address transition timing and site coordination meeting for primary and interim sites per attached ATC quotes.	N/A	N/A
Prepare and or review reimbursement form	\$2,630.00	\$5,000.00	Complex request with shared tower and need for interim facilities, also to be shared with multiple broadcasters; responding to FCC inquiries.	N/A	N/A

Project management of the transition	\$15,010.00	\$35,460.00	Primary: 44 hrs construction project mgt + 94.8 hrs of project mgt for transition + RF sys test Interim: 24 hrs construction project mgt + 94.8 hrs project mgt for transition + RF sys test Per attached ATC quotes	N/A	N/A
Sub-total	\$139,860.00	\$159,470.00	N/A	\$0.00	N/A
Total for all systems	\$7,600,049.40	\$4,116,963.18	N/A	\$0.00	N/A

Components

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 Cost Justification
Other Expenses	\$86,790.00	\$84,600.00		\$0.00	
Pre planning survey and engineering	<i>\$5,000.00</i>	\$5,000.00	N/A	N/A	N/A
Site coordination meetings	<i>\$1,760.00</i>	\$1,760.00	N/A	N/A	N/A
MVPD Notification of Channel Change	<i>\$8,000.00</i>	\$8,000.00	N/A	N/A	N/A
Develop and air announcement of upcoming channel change	<i>\$30,000.00</i>	\$30,000.00	N/A	N/A	N/A
Equipment Storage	<i>\$5,000.00</i>	\$5,000.00	N/A	N/A	N/A
Equipment Delivery and Handling Charges	<i>\$8,500.00</i>	\$8,500.00	Includes primary and interim sites per ATC quotes.	N/A	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	<i>\$5,000.00</i>	\$5,000.00	N/A	N/A	N/A
Non-zoning permits	<i>\$1,500.00</i>	\$1,500.00	Includes primary and interim sites per ATC quotes.	N/A	N/A
Local Zoning	<i>\$840.00</i>	\$840.00	Public	N/A	N/A

			hearing for primary and interim sites per ATC quotes.		
FCC Filing Fees - Special Temporary Authorization request	\$195.00	\$0.00	N/A	N/A	N/A
FCC Filing Fees - Form 2100 license to cover application	\$335.00	\$0.00	N/A	N/A	N/A
DTV Medical Facility Notification	\$11,550.00	\$11,000.00	N/A	N/A	N/A
FCC Filing Fees - Form 2100 minor change CP application	\$1,110.00	\$0.00	N/A	N/A	N/A
RF System Commission	\$8,000.00	\$8,000.00	Includes primary and interim sites per ATC quotes.	N/A	N/A
Sub-total	\$86,790.00	\$84,600.00	N/A	\$0.00	N/A
Total for all systems	\$7,600,049.40	\$4,116,963.18	N/A	\$0.00	N/A

Components

Information not provided.

**Cost
Information**

Grand Total

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	\$7,600,049.40	\$4,116,963.18	\$0.00

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	<p>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.</p>	
		<ol style="list-style-type: none"> 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.

Eric Brass
Clerk

09/14/2017

Attachments