

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

13989 Service: DTV Channel: 36 (UHF) Facility Call WAVE Sign:

ID:

File 0000025187

Number:

FRN: 0018223693 Date 09/21

> Submitted: /2020

Applicant Information

Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
GRAY TELEVISION LICENSEE, LLC Doing Business As: WAVE TV	4370 PEACHTREE ROAD, NE ATLANTA, GA 30319 United States	+1 (404) 504-9828	robert. folliard@gray. tv	Limited Liability Company

Reimbursement Contact Name and Information Reimbursement Contact Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Contact Information

Preparer Contact Name and Information

Applicant	Address	Phone	Email

The Preparer is same as the reimbursement contact.

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	Install interim antenna/ Line Remove top mounted antenna and install new antenna. Connect to existing dual broadband lines Install new main and backup transmitters. Combiner, Line, Antenna and tower systems cost divided 50% with WLKY

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	Emergency Backup
	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	Ranger
	Year	2009
	Туре	Solid State
	Solid State Cooling	Air Cooled
	Solid State Power Capacity	1.1 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?	No
	Manufacturer	
	Model	UAXTE-2R 37
	Transmitter Type	Solid State
	Solid State Cooling	Air Cooled
	Solid State Power capacity	1.2 kW
	Justification for New Transmitter	Existing transmitter can not be retuned EOL letter attached

Auxiliary 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	150 kVA
	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
	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?	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

Other Transmitter Cost Not Listed

Transmitter 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	
Manufacturer and Type	Model	Sigma
	Year	2003
	Туре	Inductive Output Tube
	IOT Power Type	Single
	Power Capacity	30 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-50
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	30.05 kW
	Justification for New Transmitter	Existing transmitter can not be retuned Headroom analysis attached

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	150 kVA
	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
	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?	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
Transmitter Installation	Primary Transmitter Installation

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	Purchase New
	Antenna Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing antenna shared with another station or stations?	Yes
	Is the existing antenna directional?	Yes
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
Existing Antenna	Class	Full Power
Manufacturer and Type	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Horizontal
	Туре	Broadband Panel
	Number of Stations Supported	2
	Number of Panels	51
	Design power capacity in use	50.0 %
	Lower Limit	545.00 MHz
	Upper Limit	695.00 MHz
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	1000.0 kW

Manufacturer	
Model	ABBP14H4- HTOC5-26 /51
Year	2003

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

Facility ID	Call Sign
53939	WLKY

Primary Antenna

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Primary (Main)
	Description of Use	N/A
	Change Type	Purchase New
	Is this a request for upgraded equipment?	Yes
	Ownership	Owned
	Owner	N/A
	Is antenna shared?	Yes
	Is antenna directional?	Yes
	Will antenna be located on or in close proximity to an antenna farm?	No
New Antenna	Class	Full Power
Manufacturer and Types	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Туре	Broadband Panel
	Number of Stations Supported	2
	Number of Panels/Bays	14
	Lower Limit	470.00 MHz
	Upper Limit	605.00 MHz
	Design power capacity in use	50.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	890.0 kW
	Manufacturer	

Model	TUM30-AP- S4-14/56H- R-2-T
Year	2019
Justification for New Antenna	Existing antenna can not be retuned Sweep data and ERI response attached

Primary Antenna

Other Antenna Costs

Question	Response
Do you need a Combiner for a Shared Antenna?	Yes
Туре	New
Number of channels supported	2
Frequencies of channels supported	RF channel
Frequency	N/A
Do you need a combiner output splitter /switcher for dual feed lines?	Yes
Do you require the separate purchase of the Elbow Complex?	Yes
Broadband or Single Channel?	Broadband
Feed Line Size	7 3/16 inches inches
Do you require the separate purchase of side mount brackets for a high power antenna?	
Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No
	Do you need a Combiner for a Shared Antenna? Type Number of channels supported Frequencies of channels supported Frequency Do you need a combiner output splitter /switcher for dual feed lines? Do you require the separate purchase of the Elbow Complex? Broadband or Single Channel? Feed Line Size Do you require the separate purchase of side mount brackets for a high power antenna? Do you require separate purchase of pattern scatter analysis for a side mount

Sweep Test	Do you require the sweep testing of	Yes
	transmission line and antenna?	

Enter a list of RF channel numbers.

RF Channel Number
14
36

Primary Antenna

Other Antenna Cost Not Listed

Information not provided.

Interim Antenna

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Interim
	Description of Use	N/A
	Change Type	Purchase New
	Ownership	Owned
	Owner	N/A
	Is antenna shared?	Yes
	Is antenna directional?	Yes
	Will antenna be located on or in close proximity to an antenna farm?	No
New Antenna	Class	Full Power
Manufacturer and Type	Mounting	Side Mount
	Antenna position in stack	Not in Stack
	Polarization	Horizontal
	Туре	Broadband Slot
	Number of Stations Supported	2
	Number of Panels/Bays	24
	Lower Limit	470.00 MHz
	Upper Limit	680.00 MHz
	Design power capacity in use	100.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	680.0 kW
	Manufacturer	
	Model	TFU-WB24
	Year	2019

Transition
side mount
antenna
needed to
enable
removal of
existing top
mount
antenna
and
installation
of new
repack
channel
capable
antenna.

Interim Antenna

Other Antenna Costs

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?	No
	Broadband or Single Channel?	N/A
	Feed Line Size	N/A
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	Yes
	transmission line and antenna?	

Interim Antenna **Other Antenna Cost Not Listed**

Information not provided.

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

Primary Existing Transmission Line Transmission Line

settion	Question	Response
Existing Transmission Line Description	Type of change	Utilize Existing
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	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	Andrew
	Туре	Rigid
	Diameter	7 3/16 inches
	Other Diameter	N/A
	Segment Length	Broadband
	Other Segment Length	N/A
	Number of parallel runs	2
	Length	1000 feet per run

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

Facility ID	Call Sign
53939	WLKY

Other Transmission Line Expenses Not Listed

Transmission	Name	Description
	Transmission Line - Other Expenses Not	Nitrogen required to dry transmission line
	Listed - Nitrogen for Transmission Line	

Interim Transmission

New Transmission Line

n Line Section	Question	Response
New Transmission Line	Use	Interim
Costs	Description of Use	N/A
	Change Type	Purchase New
	Туре	Rigid
	Diameter	6 1/8 inches
	Segment Length	Broadband
	Other Segment Length	
	Number of parallel runs	1
	Length	950 feet per run
	Justification for New Transmission Line	Interim during new antenna installation

Interim

Other Transmission Line Expenses Not Listed

Transmission _N	laine	Description
	Interim Transmission Line Other Expenses	Other expenses required for operation of interim transmission line

Tower Equipment And Rigging Costs

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

Primary Tower

Existing Tower

Section	Question	Response
Existing Tower	Type of change	Modify Existing
Description	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?	No
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1230057
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	38° 22' 08.4" N-
	Longitude (NAD83)	085° 49' 47.6" W-
	Overall Structure Height	960.95 feet
	Support Structure Height	899.92 feet
	Ground Elevation Above Mean Sea Level (AMSL)	982.93 feet

Structure Type	GTOWER - Guyed Structure Used for Communication Purposes
Tower Owner	P & B Towers LLC
Date Constructed	03/11/2015

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
53939	WLKY	DTV

Primary 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

Primary Tower

Tower Rigging Costs

Section	Question	Response
Tower Rigging Costs	Complex Tower	N/A
Helicopter Services Required	Are helicopter services required?	Yes

Primary Tower

Other Tower Expenses Not Listed

Information not provided.

Outside Professional

Section	Question	Response
Services Costs Outside Project Management Services	Do you require outside project management services?	Yes
	Number of Hours	595
	Explanation	Pattern analysis Antenna Spec Transmitter Spec Building drawings Installation Supervision Accounting Internal Legal
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	1
	Do you have Distributed Transmission System engineering services?	N/A
	Critical Facility	N/A
	Terrain-Shielded Facility	N/A

Attorney and Other Outside Consulting	Prepare and file Form FCC Construction Permit Application	Yes
Services	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	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	No
	Address transition timing and coordination issues w/ other stations and wireless providers	No
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
Outside
Professional Services Expenses Not Listed
Professional Services © ostsided.

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	No
	BLM or NFS Coordination	No
	FCC Construction Permit Minor Change	No
	FCC License to Cover Application	No
	FCC Special Temporary Authority Application	No
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
Security	Armed security provided by vendor to the equipment shelter site

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
Primary Transmitter ULXTE-50	\$1,048,738.00	\$1,091,850.25		\$980,993.99	
Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$6,368.46	Per Estimated Cost Justification WAVE-110- 1st Primary Transmitter - 3 Phase, 480 V, 150 KVA Transformer v0 Per GatesAir Quote Q- 73547 (estimates is the quoted amount minus the amount already reimbursed under the primary transmitter category)	\$6,368.46	N/A
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	N/A	N/A	N/A

UHF - Liquid Cooled Solid State Transmitter 21 - 31 kW	\$947,000.00	\$1,011,193.79	see Estimated Cost Justification WAVE-110- 1st Primary Transmitter - UHF Liquid Cooled Solid State, 21-31 kW v0	\$937,397.29	N/A
Transmitter Installation	\$37,988.00	\$37,988.00	Please see WAVE Primary Transmitter Installation Budget Revision Justification Letter	\$37,228.24	N/A
Auxiliary Transmitter UAXTE-2R 37	\$189,750.00	\$120,866.80		\$55,884.20	
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	N/A	N/A	N/A
Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$24,300.00	N/A	N/A	N/A
UHF - Air Cooled Solid State Transmitter 1 - 2.5 kW	\$126,000.00	\$60,266.80	Quote attached (GA- 00021721)	\$55,884.20	N/A
Sub-total	\$1,238,488.00	\$1,212,717.05	N/A	\$1,036,878.19	N/A
Total for all systems	\$3,389,618.67	\$3,672,371.99	N/A	\$2,025,322.25	N/A

Actual Information Description	File Name	
Transformer 3 phase/480v - 150 KVA	Component Description:	WAVE-110-1st Primary
		Transmitter - 3
		Phase, 480 V, 300 KVA Transformer
	Amount:	\$3,883.21
	Component Description:	WAVE-110-1st
		Primary
		Transmitter - 3
		Phase, 480 V, 150 KVA Transformer
	Amount:	\$2,485.25
Switchgear - industrial 800 amp	Information not provided.	

UHF - Liquid Cooled Solid State Transmitter 21 - 31 kW

Component Description: ULXTE-40 per

Quote Q-73547

Amount: \$87,716.71

Component Description: Transmitter

Amount:

Amount:

Amount:

\$434,479.84

Component Description: Transmitter, Mask

Filter Saystem \$210,382.52

Component Description: WAVE-110-1st

Primary

Transmitter - UHF Liquid Cooled Solid State, 21-31

kW

Amount: \$2,960.19

Component Description: ULXTE-40

Amount: \$70,282.97

Component Description: ULXTE-40

Transmitter per Quote Q-73547 \$131,575.06

Component Description: Percent of

contract amount

Amount: \$37,228.24

Transmitter Installation

Component Description: Labor, Material

and Equipment.

Amount: \$37,228.24

Switchgear - industrial 800 amp	Information not provided.	
Transformer 3 phase/480v - 150 KVA	Information not provided.	
UHF - Air Cooled Solid State Transmitter 1 - 2.5 kW	Component Description:	Transmitter, Mask Filter Saystem, Electrical,
		Installation & Proof
	Amount:	\$7,891.62
	Component Description:	Transmitter
	Amount:	\$27,229.71
	Component Description:	UAXTE-2-E
	Amount:	Transmitter \$15,501.79
	Component Description:	UAXTE-2-E
	Amount:	\$5,261.08

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
Interim Antenna TFU-WB24	\$157,180.00	\$156,850.00		\$6,400.00	
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	\$6,400.00	N/A
UHF - High Power, Side Mount, basic slot antenna, 24 bay,, 680 kW input, directional,, horizontally	\$150,450.00	\$150,450.00	Dielectric quote attached	N/A	N/A
Primary Antenna TUM30-AP- S4-14/56H- R-2-T	\$1,001,780.00	\$1,189,820.47		\$378,126.78	
Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)	\$16,850.00	\$28,620.00	Please see Dielectric quote 700083CMZ- 3	N/A	N/A

Combiner output splitting /switching for dual feed lines, if applicable \$126,000.00 \$139,350.00 Quote attached N/A N/A N/A UHF - High reed lines, if applicable \$768,000.00 \$519,750.00 Please see WAVE WAVE Primary Antenna revised 700083CMZ-3.pdf N/A N/A N/A Station broadband panel antenna, elliptically or circularly polarized \$6,730.00 \$6,400.00 N/A N/A N/A New combiner, cost per channel (without antenna) \$84,200.00 \$495,700.47 Please see Estimated Cost Justification WAVE-210-Primary Antenna - New Combiner vo N/A Sub-total \$1,158,960.00 \$1,346,670.47 N/A \$384,526.78 N/A Total for all systems \$3,389,618.67 \$3,672,371.99 N/A \$2,025,322.25 N/A						
Power Top Mount (200-1000 kW),	output splitting /switching for dual feed lines,	\$126,000.00	\$139,350.00		N/A	N/A
of existing antenna New \$84,200.00 \$495,700.47 Please see \$378,126.78 N/A combiner, cost per channel (without antenna) Primary Antenna - New Combiner v0 Sub-total \$1,158,960.00 \$1,346,670.47 N/A \$384,526.78 N/A Total for \$3,389,618.67 \$3,672,371.99 N/A \$2,025,322.25 N/A all	Power Top Mount (200- 1000 kW), Two Station broadband panel antenna, elliptically or circularly	\$768,000.00	\$519,750.00	WAVE Primary Antenna revised 700083CMZ-	N/A	N/A
combiner, cost per Cost Channel Justification (without WAVE-210-antenna) Primary Antenna - New Combiner v0 Sub-total \$1,158,960.00 \$1,346,670.47 N/A \$384,526.78 N/A Total for \$3,389,618.67 \$3,672,371.99 N/A \$2,025,322.25 N/A all	of existing	\$6,730.00	\$6,400.00	N/A	N/A	N/A
Total for \$3,389,618.67 \$3,672,371.99 N/A \$2,025,322.25 N/A all	combiner, cost per channel (without	\$84,200.00	\$495,700.47	Estimated Cost Justification WAVE-210- Primary Antenna - New	\$378,126.78	N/A
all	Sub-total	\$1,158,960.00	\$1,346,670.47	N/A	\$384,526.78	N/A
	all	\$3,389,618.67	\$3,672,371.99	N/A	\$2,025,322.25	N/A

Components

Actual Information	
Description	File Name

Sweep test of existing antenna	Component Description: Amount:	Repack Sweep \$6,400.00	
UHF - High Power, Side Mount, basic slot antenna, 24 bay,, 680 kW input, directional,, horizontally polarized	Information not provided.		
Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)	Information not provided.		
Combiner output splitting /switching for dual feed lines, if applicable	Information not provided.		
UHF - High Power Top Mount (200-1000 kW), Two Station broadband panel antenna, elliptically or circularly polarized	Information not provided.		
Sweep test of existing antenna	Information not provided.		
New combiner, cost per channel (without antenna)	Component Description:	Combiner RF Accessories Stage 2,3,5	
	Amount:	Services \$162,690.74	
	Component Description: Amount:	Combiner \$52,745.30	
	Component Description: Amount:	Combiner \$162,690.74	

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	\$220,650.00	\$141,561.80		\$688.77	
Interim Transmission Line Other Expenses	\$250.00	\$250.00	Please see WAVE Interim Transmission Line Other Expenses Budget Revision Justification Letter	\$250.00	N/A
Rigid Transmission Line - copper, 6 1 /8" broadband	\$220,400.00	\$141,311.80	Quote attached	\$438.77	N/A
Primary Transmission Line	\$285.38	\$285.38		\$285.38	
Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line	\$285.38	\$285.38	see Estimated Cost Justification WAVE-310- Primary Transmission Line - Other Expenses Not LIsted - Nitrogen for Transmission Line v1	\$285.38	Invoices
Sub-total	\$220,935.38	\$141,847.18	N/A	\$974.15	N/A

Total for all	\$3,389,618.67	\$3,672,371.99	N/A	\$2,025,322.25	N/A
systems					

Components

File Name	
Component Description: Amount:	Other \$250.00
Component Description: Amount:	Invoice moved to correct budget category. N/A
Component Description: Amount:	Rent Cyl Ind Large Acetylene \$33.54
Component Description: Amount:	Nitrogen Industrial 200 CGA 580 \$163.82
Component Description:	Cylinder Rental (acetylene, nitrogen, oxygen, other)
Amount:	\$36.88
Component Description: Amount:	Acetylene IND \$173.51
Component Description: Amount:	Rent Cyl Ind Large Acetylene \$31.02
	Component Description: Amount: Component Description: Amount: Component Description: Amount: Component Description: Amount: Component Description: Amount: Component Description: Component Description: Component Description: Component Description:

Transmission Line - Other Expenses Not Listed -Nitrogen for Transmission Line

Component Description: Nitrogen Industrial

200

Amount: \$84.43

Component Description: WAVE-310-

Primary

Transmission Line
- Other Expenses
Not Listed Nitrogen for

Transmission Line

Amount: \$40.46

Component Description: Rent Cyl Ind Large

Nitrogen

Amount: \$70.91

Component Description: "WAVE-310-

Primary

Transmission Line
- Other Expenses
Not Listed -

Not Listed -Nitrogen for

Transmission Line"

Amount: \$26.49

Component Description: "WAVE-310-

Primary

Transmission Line
- Other Expenses
Not Llsted Nitrogen for

Transmission Line-

"

Amount: \$63.09

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
Primary Tower GTOWER	\$495,100.00	\$661,776.00		\$465,438.50	
Tall Tower (greater than 500')	\$210,500.00	\$385,776.00	Please See Estimated Cost Justification WAVE-410- Existing Primary Tower - Tower Rigging, Tall Tower v0	\$345,776.00	N/A
Tower Helicopter Lift	\$114,000.00	\$114,000.00	Please see attached Tower King II, Inc. Proposal C- 19-010-2	\$114,000.00	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$150,000.00	N/A	N/A	N/A
Structural engineering tower load study for well documented tower	\$12,600.00	\$12,000.00	N/A	\$5,662.50	N/A
Sub-total	\$495,100.00	\$661,776.00	N/A	\$465,438.50	N/A
Total for all systems	\$3,389,618.67	\$3,672,371.99	N/A	\$2,025,322.25	N/A

Components

Actual Information Description	File Name	
Tall Tower (greater than 500')	Component Description: Amount:	Tower Service \$71,550.00
	Component Description: Amount:	Interim Antenna Installation \$29,851.00
	Component Description: Amount:	Tower service \$106,500.00
	Component Description: Amount:	Tower Service \$102,950.00
	Component Description:	Customer deposit for Repack Interim Antenna Installation
	Amount:	Services \$34,925.00

Tower Helicopter Lift		
	Component Description:	WAVE-410- Existing Primary Tower - Helicopter
	Amount:	Lift- \$28,450.00
	Component Description:	WAVE-410- Existing Primary Tower - Helicopter Lift-
	Amount:	\$43,500.00
	Component Description:	WAVE-410- Existing Primary Tower - Helicopter Lift
	Amount:	\$42,050.00
Minor tower reinforcement /modifications	Information not provided.	
Structural engineering tower load study for well documented tower	Component Description:	WAVE-410- Existing Primary Tower - Structural Engineering
	Amount:	Tower Load Study \$162.50
	Component Description:	Tower Service - Mapping of WAVE Tower for Repack
	Amount:	\$5,500.00

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	\$207,870.00	\$248,896.00		\$105,903.51	
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	\$3,680.00	\$3,500.00	N/A	N/A	N/A
Attorney Fees - Negotiation of lease and other matters for shared locations	\$4,210.00	\$471.00	Please see WAVE Attorney Other Matters Budget Revision Justification Cover Letter	\$471.00	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 \$0.00 Prepare and File FCC Form 2100 (main), Construction Permit Application \$2,050.00 \$1,500.00 N/A \$800.00 Prepare request for Special Temporary Authorization \$1,580.00 \$1,500.00 N/A \$370.83 Prepare engineering section of FCC Form 2100 (main), License to Cover Application \$3,155.00 \$3,000.00 N/A \$2,950.00 Perpare engineering section of FCC Form 2100 (main), Construction Permit Application \$7,360.00 \$7,000.00 N/A \$3,108.34 Perform engineering study for new channel assignment and antenna development \$94,010.00 \$144,675.00 Widelity Strategic Support \$98,203.34						
request for Special Temporary Authorization Prepare \$1,580.00 \$1,500.00 N/A \$370.83 engineering section of FCC Form 2100 (main), License to Cover Application Prepare \$3,155.00 \$3,000.00 N/A \$2,950.00 engineering section of FCC Form 2100 (main), Construction Permit Application Perform \$7,360.00 \$7,000.00 N/A \$3,108.34 engineering study for new channel assignment and antenna development Project \$94,010.00 \$144,675.00 Widelity \$98,203.34 Strategic	N/A	\$0.00	N/A	\$5,000.00	\$5,260.00	Prepare and File FCC Form 2100 (main), Construction Permit
engineering section of FCC Form 2100 (main), License to Cover Application Prepare \$3,155.00 \$3,000.00 N/A \$2,950.00 engineering section of FCC Form 2100 (main), Construction Permit Application Perform \$7,360.00 \$7,000.00 N/A \$3,108.34 engineering study for new channel assignment and antenna development Project \$94,010.00 \$144,675.00 Widelity \$98,203.34 management of	N/A	\$800.00	N/A	\$1,500.00	\$2,050.00	request for Special Temporary
engineering section of FCC Form 2100 (main), Construction Permit Application Perform \$7,360.00 \$7,000.00 N/A \$3,108.34 engineering study for new channel assignment and antenna development Project \$94,010.00 \$144,675.00 Widelity \$98,203.34 management of Strategic	N/A	\$370.83	N/A	\$1,500.00	\$1,580.00	engineering section of FCC Form 2100 (main), License to Cover
engineering study for new channel assignment and antenna development Project \$94,010.00 \$144,675.00 Widelity \$98,203.34 management of Strategic	N/A	\$2,950.00	N/A	\$3,000.00	\$3,155.00	engineering section of FCC Form 2100 (main), Construction Permit
management of Strategic	N/A	\$3,108.34	N/A	\$7,000.00	\$7,360.00	engineering study for new channel assignment and antenna
Quote	N/A	\$98,203.34	Strategic Support	\$144,675.00	\$94,010.00	management of
Sub-total \$207,870.00 \$248,896.00 N/A \$105,903.51	N/A	\$105,903.51	N/A	\$248,896.00	\$207,870.00	Sub-total
Total for all \$3,389,618.67 \$3,672,371.99 N/A \$2,025,322.25 systems	N/A	\$2,025,322.25	N/A	\$3,672,371.99	\$3,389,618.67	

Actual Information Description	File Name	
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 - Negotiation of lease and other matters for shared locations	Component Description: Amount:	Total Professiona Services \$471.00
Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application	Information not provided.	
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	Information not provided.	
Prepare request for Special Temporary Authorization	Component Description: Amount:	Consulting Engineer \$800.00
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	Component Description:	WAVE-530-RF Eng - License To Cover Application
	Amount:	(Main) \$120.83
	Component Description:	WAVE-530-RF Eng - License To Cover Application

Prepare engineering section of FCC Form 2100 (main), Construction Permit Application

Component Description: WAVE-530-RF

Eng - Construction

Permit Application

Amount: \$700.00

Component Description: FCC Form 2100

Construction

Permit Application

Amount: \$2,250.00

Perform engineering study for new channel assignment and antenna development

Component Description: Engineering study

work for new

channel

assignment and

antenna development

Amount: \$1,375.00

Component Description: Engineering study

work for new

channel

assignment and

antenna

development;

Amount: \$250.00

Component Description: Review various

materials

Amount: \$1,200.00

Component Description: WAVE-530-RF

Eng - Engineering Study for New

Channel Assignment

Amount: \$116.67

Component Description: WAVE-530-RF

Eng - Engineering Study for New Channel Assignment

Amount: \$158.34

Component Description: Engineering study

work for new channel

assignment and

antenna development

Amount: \$125.00

Project management of the transition

Component Description: Project

Management

Amount: \$48.76

Component Description: Project

Management

Amount: \$2,713.15

Component Description: Project

management

Amount: \$3,142.70

Component Description: Project

Management

Amount: \$4,216.85

Component Description: Project

Management

Amount: \$415.80

Component Description: Project

Amount: Management \$4,748.75

Component Description: Project

Management

Amount: \$84.70

Component Description: Project

Management

Amount: \$4,158.70

Component Description: Project

Management

Amount: \$3,158.80

Component Description: Project

Management

Amount: \$5,274.65

Component Description: Project

Management

Amount: \$338.81

Component Description: Project

Management

Amount: \$4,222.05

Component Description: Project

Management

Amount: \$87.26

Component Description: Project

Management

Amount: \$4,897.00

Component Description:

Amount:

Project

Management \$2,963.45

Project

Component Description:

Management

Amount:

\$1,463.00

Component Description:

Project

Amount:

Management \$6,348.90

Component Description:

Repack Engineering

Amount:

\$795.15

Component Description:

Project

Amount:

Management \$3,614.95

Component Description:

Project

Amount:

Management \$2,145.70

Component Description:

Project

Amount:

Management

\$3,176.20

Component Description:

Project

Amount:

Management \$2,678.35

Component Description:

Project

Amount:

Management

\$5,507.15

Component Description: P

Project Management

Amount:

\$3,544.40

Component Description:

Project

management \$8,223.05

Component Description:

Project

Amount:

Amount:

Management \$4,188.25

Component Description:

Project

Amount:

Amount:

Management \$110.36

Component Description:

Project

Management \$1,965.45

Component Description:

Project

Management

Amount:

\$3,777.30

Component Description:

Project

Amount:

Management \$4,384.10

Component Description:

Project Management

Amount:

\$6,604.75

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 Co Justificati
Other Expenses	\$68,265.29	\$60,465.29		\$31,601.12	
Security	\$3,386.26	\$3,386.26	Armed security provided by vendor to the equipment shelter site. Please see multiple invoices.	\$3,386.26	N/A
MVPD Notification of Channel Change	\$0.00	\$0.00	N/A	N/A	N/A
Develop and air announcement of upcoming channel change	\$2,850.00	\$2,850.00	estimate for on air rescan announcement production. Quote attached	N/A	N/A
Equipment Storage	\$30,500.00	\$30,500.00	Estimate for Dielectric on site antenna storage Dielectric letter attached	\$5,842.20	N/A
Equipment Delivery and Handling Charges	\$17,566.95	\$17,566.95	see Estimated Cost Justification WAVE-610- Equipment Delivery and Handling v3	\$17,566.95	N/A

Disposal Costs (for equipment and other waste, net of any salvage value)	\$2,412.08	\$2,412.08	see Estimated Cost Justification WAVE-610- Disposal Costs v1	\$1,055.71	N/A
DTV Medical Facility Notification	\$11,550.00	\$3,750.00	Group quote attached	\$3,750.00	N/A
Sub-total	\$68,265.29	\$60,465.29	N/A	\$31,601.12	N/A
Total for all systems	\$3,389,618.67	\$3,672,371.99	N/A	\$2,025,322.25	N/A

Components

•		
Actual Information Description	File Name	
Security	Component Description: Amount:	Guard Services \$1,760.86
	Component Description: Amount:	Security Services \$1,625.40
MVPD Notification of Channel Change	Information not provided.	
Develop and air announcement of upcoming channel change	Information not provided.	
Equipment Storage	Component Description: Amount:	Sale 40 SC 1- Tripper \$5,842.20
Equipment Delivery and Handling Charges	Component Description:	10K 55' CAB SHOOTING BOOM FORKLIFT
	Amount:	\$3,380.07

Component Description: 15' Single Manlift

S/P

Amount: \$914.64

Component Description: 10K 55' shooting

boom forklift \$3,638.06

Component Description: 1 Waste

Amount:

Container 6 Cu

Υd

Amount: \$700.57

Component Description: 15' SINGLE

MANLIFT S/P

Amount: \$460.44

Component Description: 10K 55' CAB

Shooting Boom

Forklift

Amount: \$4,061.01

Component Description: 15' Single Manlift

S/P

Amount: \$1,198.89

Component Description: Single Manlift

Amount: \$1,166.28

Component Description: 25-26' ELECT

SCISSOR

NARROW **Amount:** \$1,188.34

Component Description: 15' SINGLE

MANLIFT S/P

Amount: \$858.65

Disposal Costs (for equipment and other waste, **Component Description:** 1 Waste net of any salvage value) Container 8 Cu Yd, 2 Lifts Per Week Amount: \$361.31 **Component Description: VACUUM FEE** WITH NO SOLIDS Amount: \$694.40 **Component Description:** 1 Waste Container \$711.08 Amount: **DTV Medical Facility** Notification **Component Description:** Medical Notification Mailing Amount: \$3,750.00

Cost Information

Grand Total

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	\$3,389,618.67	\$3,672,371.99	\$2,025,322.25

Reimburseme	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

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 abovenamed applicant for the Authorization(s) specified above. Robert Folliard , III

Assistant Secretary

09/21/2020

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.
- The above-named entity certifies that the statements in this form and attached documentation are true, complete, and correct.
- 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 abovenamed applicant for the Authorization(s) specified above. Robert Folliard , III

Assistant Secretary

09/21/2020

Attachments