

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility **13989** | Service: **DTV** | Call **WAVE** | Channel: **36 (UHF)** |
 ID: | Sign:
 File **0000025187**
 Number:
 FRN: **0018223693** | Date **10/07**
 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

Applicant	Address	Phone	Email
[Confidential]			

Preparer Contact Name and Information

Applicant	Address	Phone	Email
The Preparer is same as the reimbursement contact.			

Broadcaster Information and Transition Plan

Question	Response
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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 and Type	Manufacturer	
	Model	Ranger
	Year	2009
	Type	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	Yes

	Description	Electrical drawings and other electrical work required for Auxiliary transmitter operation
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**

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	Sigma
	Year	2003
	Type	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	Yes

	Description	Electrical drawings and other electrical work required for Primary transmitter operation
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
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 Manufacturer and Type	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Horizontal
	Type	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 Manufacturer and Types	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	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

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	Yes
	Type	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
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?	
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
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 Manufacturer and Type	Class	Full Power
	Mounting	Side Mount
	Antenna position in stack	Not in Stack
	Polarization	Horizontal
	Type	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

	Justification for New Antenna	Transition side mount antenna needed to enable removal of existing top mount antenna and installation of new repack channel capable antenna.
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Interim 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?	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 transmission line and antenna?	Yes
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**Interim
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

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	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
	Type	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

Primary Transmission Line **Other Transmission Line Expenses Not Listed**

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

Interim Transmission Line **New Transmission Line**

Section	Question	Response
New Transmission Line Costs	Use	Interim
	Description of Use	N/A
	Change Type	Purchase New
	Type	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 Transmission Line **Other Transmission Line Expenses Not Listed**

Name	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 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?	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 Services Costs**

Section	Question	Response
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 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	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 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	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 Justification
Primary Transmitter ULXTE-50	\$1,049,550.50	\$1,092,662.75		\$980,993.99	
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
Other Electrical Service: Electrical drawings and other electrical work required for Primary transmitter operation	\$812.50	\$812.50	Please see WAVE Primary Transmitter - Other Electrical Service Budget Revision Justification Letter	N/A	N/A

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
Auxiliary Transmitter UAXTE-2R 37	\$190,562.50	\$121,679.30		\$55,884.20	
Other Electrical Service: Electrical drawings and other electrical work required for Auxiliary transmitter operation	\$812.50	\$812.50	Please see WAVE Auxiliary Transmitter - Other Electrical Service Budget Revision Justification Letter	N/A	N/A

Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$24,300.00	N/A	N/A	N/A
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	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	\$1,240,113.00	\$1,214,342.05	N/A	\$1,036,878.19	N/A
Total for all systems	\$3,435,249.75	\$3,718,003.07	N/A	\$2,569,272.34	N/A

Components

Actual Information

Description

File Name

UHF - Liquid Cooled Solid State Transmitter 21 - 31 kW	Component Description: Transmitter Amount: \$434,479.84
	Component Description: Transmitter, Mask Filter Saystem Amount: \$210,382.52
	Component Description: ULXTE-40 per Quote Q-73547 Amount: \$87,716.71
	Component Description: Percent of contract amount Amount: \$37,228.24
	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 Amount: \$131,575.06
Transmitter Installation	Component Description: Labor, Material and Equipment. Amount: \$37,228.24

Other Electrical Service: Electrical drawings and other electrical work required for Primary transmitter operation	Information not provided.
Transformer 3 phase/480v - 150 KVA	<div> <div> Component Description: </div> <div> WAVE-110-1st Primary Transmitter - 3 Phase, 480 V, 300 KVA Transformer </div> </div> <div> <div> Amount: </div> <div> \$3,883.21 </div> </div> <div> <div> Component Description: </div> <div> WAVE-110-1st Primary Transmitter - 3 Phase, 480 V, 150 KVA Transformer </div> </div> <div> <div> Amount: </div> <div> \$2,485.25 </div> </div>
Switchgear - industrial 800 amp	Information not provided.
Other Electrical Service: Electrical drawings and other electrical work required for Auxiliary transmitter operation	Information not provided.
Transformer 3 phase/480v - 150 KVA	Information not provided.
Switchgear - industrial 800 amp	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:	UAXTE-2-E Transmitter
	Amount:	\$15,501.79
	Component Description:	Transmitter
	Amount:	\$27,229.71
	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 Justification
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 polarized	<i>\$150,450.00</i>	\$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		\$898,716.78	
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	\$4,800.00	N/A

UHF - High Power Top Mount (200-1000 kW), Two Station broadband panel antenna, elliptically or circularly polarized	\$768,000.00	\$519,750.00	Please see WAVE Primary Antenna revised 700083CMZ-3.pdf	\$389,812.50	N/A
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	\$21,465.00	N/A
Combiner output splitting /switching for dual feed lines, if applicable	\$126,000.00	\$139,350.00	Quote attached	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 v0	\$482,639.28	N/A
Sub-total	\$1,158,960.00	\$1,346,670.47	N/A	\$905,116.78	N/A
Total for all systems	\$3,435,249.75	\$3,718,003.07	N/A	\$2,569,272.34	N/A

Components

Actual Information
Description

File Name

Sweep test of existing antenna	<div> Component Description: Repack Sweep</div> <div> Amount: \$6,400.00</div>
UHF - High Power, Side Mount, basic slot antenna, 24 bay,, 680 kW input, directional,, horizontally polarized	Information not provided.
Sweep test of existing antenna	<div> Component Description: WAVE-210-Primary Antenna - Sweep Test</div> <div> Amount: \$1,600.00</div> <div> Component Description: WAVE-210-Primary Antenna - Sweep Test</div> <div> Amount: \$3,200.00</div>
UHF - High Power Top Mount (200-1000 kW), Two Station broadband panel antenna, elliptically or circularly polarized	<div> Component Description: ANTENNA-UHF HIGH POWER TOP MOUNT</div> <div> Amount: \$129,937.50</div> <div> Component Description: ANTENNA - UHF HIGH POWER TOP MOUNT</div> <div> Amount: \$259,875.00</div>

<p>Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)</p>	<table> <tr> <td data-bbox="721 174 1027 210">Component Description:</td><td data-bbox="1161 174 1374 286">WAVE-210- Primary Antenna - Elbow Complex</td></tr> <tr> <td data-bbox="721 297 831 329">Amount:</td><td data-bbox="1161 297 1278 329">\$7,155.00</td></tr> <tr> <td data-bbox="721 436 1027 472">Component Description:</td><td data-bbox="1161 436 1374 548">WAVE-210- Primary Antenna - Elbow Complex</td></tr> <tr> <td data-bbox="721 560 831 591">Amount:</td><td data-bbox="1161 560 1294 591">\$14,310.00</td></tr> </table>	Component Description:	WAVE-210- Primary Antenna - Elbow Complex	Amount:	\$7,155.00	Component Description:	WAVE-210- Primary Antenna - Elbow Complex	Amount:	\$14,310.00
Component Description:	WAVE-210- Primary Antenna - Elbow Complex								
Amount:	\$7,155.00								
Component Description:	WAVE-210- Primary Antenna - Elbow Complex								
Amount:	\$14,310.00								
<p>Combiner output splitting /switching for dual feed lines, if applicable</p>	<p>Information not provided.</p>								

New combiner, cost per
channel (without antenna)

Component Description:

WAVE-210-
Primary Antenna -
Combiner Output
Splitting/Switching
for Dual Lines

Amount:

\$69,675.00

Component Description:

WAVE-210-
Primary Antenna -
Combiner Output
Splitting/Switching
for Dual Lines

Amount:

\$34,837.50

Component Description:

Combiner

Amount:

\$52,745.30

Component Description:

Combiner

Amount:

\$162,690.74

Component Description:

Combiner RF
Accessories
Stage 2,3,5
Services

Amount:

\$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		\$2,308.77	
Rigid Transmission Line - copper, 6 1/8" broadband	\$220,400.00	\$141,311.80	Quote attached	\$2,058.77	N/A
Interim Transmission Line Other Expenses	<i>\$250.00</i>	\$250.00	Please see WAVE Interim Transmission Line Other Expenses Budget Revision Justification Letter	\$250.00	N/A
Primary Transmission Line	\$23,086.38	\$23,086.38		\$11,614.88	
Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line	<i>\$23,086.38</i>	\$23,086.38	see Estimated Cost Justification WAVE-310-Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line v2	\$11,614.88	Invoices
Sub-total	\$243,736.38	\$164,648.18	N/A	\$13,923.65	N/A

Total for all systems	\$3,435,249.75	\$3,718,003.07	N/A	\$2,569,272.34	N/A
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Components

Actual Information	
Description	File Name
Rigid Transmission Line - copper, 6 1/8" broadband	Component Description: Acetylene IND Amount: \$173.51
	Component Description: RG-223/U 50 OHM COAX-BTACKJEACKE Amount: \$1,620.00
	Component Description: Invoice moved to correct budget category. Amount: N/A
	Component Description: Rent Cyl Ind Large Acetylene Amount: \$31.02
	Component Description: Nitrogen Industrial 200 CGA 580 Amount: \$163.82
	Component Description: Cylinder Rental (acetylene, nitrogen, oxygen, other) Amount: \$36.88
	Component Description: Rent Cyl Ind Large Acetylene Amount: \$33.54

Interim Transmission Line Other Expenses	Component Description: Amount:	Other \$250.00
Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line	Component Description: Amount:	Nitrogen Industrial 200 \$84.43
	Component Description: Amount:	WAVE-380-Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line \$3,776.50
	Component Description: Amount:	WAVE-380-Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line \$7,553.00
	Component Description: Amount:	WAVE-310-Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line \$40.46
	Component Description: Amount:	"WAVE-310- Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line-" \$63.09

Component Description:	Rent Cyl Ind Large Nitrogen
Amount:	\$70.91

Component Description:	"WAVE-310- Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line"
Amount:	\$26.49

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		\$468,438.50	
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	<i>\$114,000.00</i>	\$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	\$8,662.50	N/A
Sub-total	\$495,100.00	\$661,776.00	N/A	\$468,438.50	N/A
Total for all systems	\$3,435,249.75	\$3,718,003.07	N/A	\$2,569,272.34	N/A

Components

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

Tower Helicopter Lift	<table> <tr> <td data-bbox="721 174 1027 210">Component Description:</td><td data-bbox="1161 174 1378 327">WAVE-410- Existing Primary Tower - Helicopter Lift-</td></tr> <tr> <td data-bbox="721 336 829 371">Amount:</td><td data-bbox="1161 336 1295 371">\$28,450.00</td></tr> <tr> <td data-bbox="721 474 1027 510">Component Description:</td><td data-bbox="1161 474 1378 627">WAVE-410- Existing Primary Tower - Helicopter Lift-</td></tr> <tr> <td data-bbox="721 636 829 672">Amount:</td><td data-bbox="1161 636 1295 672">\$43,500.00</td></tr> <tr> <td data-bbox="721 775 1027 810">Component Description:</td><td data-bbox="1161 775 1378 927">WAVE-410- Existing Primary Tower - Helicopter Lift</td></tr> <tr> <td data-bbox="721 936 829 972">Amount:</td><td data-bbox="1161 936 1295 972">\$42,050.00</td></tr> </table>	Component Description:	WAVE-410- Existing Primary Tower - Helicopter Lift-	Amount:	\$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
Component Description:	WAVE-410- Existing Primary Tower - Helicopter Lift-												
Amount:	\$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	<table> <tr> <td data-bbox="721 1214 1027 1249">Component Description:</td><td data-bbox="1161 1214 1378 1411">WAVE-410- Existing Primary Tower - Structural Engineering Tower Load Study</td></tr> <tr> <td data-bbox="721 1420 829 1456">Amount:</td><td data-bbox="1161 1420 1260 1456">\$162.50</td></tr> <tr> <td data-bbox="721 1559 1027 1594">Component Description:</td><td data-bbox="1161 1559 1353 1666">CLASS IV RIGGING PLAN REVIEW</td></tr> <tr> <td data-bbox="721 1675 829 1711">Amount:</td><td data-bbox="1161 1675 1279 1711">\$3,000.00</td></tr> <tr> <td data-bbox="721 1814 1027 1850">Component Description:</td><td data-bbox="1161 1814 1378 1921">Tower Service - Mapping of WAVE Tower for Repack</td></tr> <tr> <td data-bbox="721 1930 829 1966">Amount:</td><td data-bbox="1161 1930 1279 1966">\$5,500.00</td></tr> </table>	Component Description:	WAVE-410- Existing Primary Tower - Structural Engineering Tower Load Study	Amount:	\$162.50	Component Description:	CLASS IV RIGGING PLAN REVIEW	Amount:	\$3,000.00	Component Description:	Tower Service - Mapping of WAVE Tower for Repack	Amount:	\$5,500.00
Component Description:	WAVE-410- Existing Primary Tower - Structural Engineering Tower Load Study												
Amount:	\$162.50												
Component Description:	CLASS IV RIGGING PLAN REVIEW												
Amount:	\$3,000.00												
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		\$113,314.10	
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	N/A
Prepare request for Special Temporary Authorization	\$2,050.00	\$1,500.00	N/A	\$800.00	N/A
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	\$1,580.00	\$1,500.00	N/A	\$370.83	N/A
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	\$2,950.00	N/A
Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$7,000.00	N/A	\$3,108.34	N/A
Project management of the transition	\$94,010.00	\$144,675.00	Widely Strategic Support Quote	\$105,613.93	N/A
Sub-total	\$207,870.00	\$248,896.00	N/A	\$113,314.10	N/A
Total for all systems	\$3,435,249.75	\$3,718,003.07	N/A	\$2,569,272.34	N/A

Components

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 Professional 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: Amount: Component Description: Amount:	WAVE-530-RF Eng - License To Cover Application (Main) \$120.83 WAVE-530-RF Eng - License To Cover Application \$250.00

Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	Component Description: Amount:	FCC Form 2100 Construction Permit Application \$2,250.00
	Component Description: Amount:	WAVE-530-RF Eng - Construction Permit Application \$700.00
Perform engineering study for new channel assignment and antenna development	Component Description: Amount:	Engineering study work for new channel assignment and antenna development \$125.00
	Component Description: Amount:	Review various materials \$1,200.00
	Component Description: Amount:	Engineering study work for new channel assignment and antenna development \$1,375.00
	Component Description: Amount:	Engineering study work for new channel assignment and antenna development; \$250.00

	Component Description:		WAVE-530-RF Eng - Engineering Study for New Channel Assignment
	Amount:		\$158.34
	Component Description:		WAVE-530-RF Eng - Engineering Study for New Channel Assignment
	Amount:		\$116.67
Project management of the transition	Component Description:		Project Management
	Amount:		\$4,222.05
	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:		\$3,176.20
	Component Description:		Project Management
	Amount:		\$415.80

Component Description:	Project Management
Amount:	\$4,748.75

Component Description:	Project Management
Amount:	\$84.70

Component Description:	Project Management
Amount:	\$3,158.80

Component Description:	Project Management
Amount:	\$338.81

Component Description:	Project Management
Amount:	\$3,614.95

Component Description:	Project management
Amount:	\$7,256.60

Component Description:	Project Management
Amount:	\$43.63

Component Description:	Project Management
Amount:	\$5,274.65

Component Description:	Project Management
Amount:	\$87.26

Component Description:	Project Management
Amount:	\$2,678.35

Component Description:	Project Management
Amount:	\$3,777.30

Component Description:	Project Management
Amount:	\$1,463.00

Component Description:	Project Management
Amount:	\$110.36

Component Description:	Project Management
Amount:	\$2,145.70

Component Description:	Project Management
Amount:	\$6,604.75

Component Description:	Project management
Amount:	\$8,223.05

Component Description:	Project Management
Amount:	\$4,188.25

Component Description:	SYSTEM, WNDU U32 D42 PH1
Amount:	\$110.36

Component Description:	Project Management
Amount:	\$2,963.45

Component Description:	Repack Engineering
Amount:	\$795.15

Component Description:	Project Management
Amount:	\$4,897.00

Component Description:	Project Management
Amount:	\$1,965.45

Component Description:	Project Management
Amount:	\$4,384.10

Component Description:	Project Management
Amount:	\$5,507.15

Component Description:	Project Management
Amount:	\$4,158.70

Component Description:	Project Management
Amount:	\$6,348.90

Component Description:	Project Management
Amount:	\$4,216.85

Component Description:	Project Management
Amount:	\$3,544.40

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	\$89,470.37	\$81,670.37		\$31,601.12	
Equipment Delivery and Handling Charges	<i>\$38,772.03</i>	\$38,772.03	see Estimated Cost Justification WAVE-610-Equipment Delivery and Handling v4	\$17,566.95	N/A
Security	<i>\$3,386.26</i>	\$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	<i>\$0.00</i>	\$0.00	N/A	N/A	N/A
Develop and air announcement of upcoming channel change	<i>\$2,850.00</i>	\$2,850.00	estimate for on air rescan announcement production. Quote attached	N/A	N/A
Equipment Storage	<i>\$30,500.00</i>	\$30,500.00	Estimate for Dielectric on site antenna storage Dielectric letter attached	\$5,842.20	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	\$89,470.37	\$81,670.37	N/A	\$31,601.12	N/A
Total for all systems	\$3,435,249.75	\$3,718,003.07	N/A	\$2,569,272.34	N/A

Components

Actual Information	
Description	File Name
Equipment Delivery and Handling Charges	<p>Component Description: 10K 55' CAB SHOOTING BOOM FORKLIFT</p> <p>Amount: \$3,380.07</p> <p>Component Description: 15' Single Manlift S/P</p> <p>Amount: \$914.64</p> <p>Component Description: 10K 55' shooting boom forklift</p> <p>Amount: \$3,638.06</p> <p>Component Description: 1 Waste Container 6 Cu Yd</p> <p>Amount: \$700.57</p> <p>Component Description: 15' SINGLE MANLIFT S/P</p> <p>Amount: \$460.44</p>

	Component Description: 25-26' ELECT SCISSOR NARROW	
	Amount: \$1,188.34	
	Component Description: 15' SINGLE MANLIFT S/P	
	Amount: \$858.65	
	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	
Security	Component Description: Security Services	
	Amount: \$1,625.40	
	Component Description: Guard Services	
	Amount: \$1,760.86	
MVPD Notification of Channel Change	Information not provided.	
Develop and air announcement of upcoming channel change	Information not provided.	

Equipment Storage	Component Description: Sale 40 SC 1-Tripper Amount: \$5,842.20
Disposal Costs (for equipment and other waste, net of any salvage value)	Component Description: 1 Waste Container 8 Cu Yd, 2 Lifts Per Week Amount: \$361.31 Component Description: 1 Waste Container Amount: \$711.08 Component Description: VACUUM FEE WITH NO SOLIDS Amount: \$694.40
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	\$3,435,249.75	\$3,718,003.07	\$2,569,272.34

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.

<p>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.</p>	
<p>I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.</p>	<p>Robert Folliard , III . <i>Assistant Secretary</i></p> <p>10/07/2020</p>

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 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 AND/OR FRAUDULENT STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT (U.S. CODE, TITLE 31, SECTIONS 3729-3733).	
		<ol style="list-style-type: none"> 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.

<p>8. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.</p> <p>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.</p>	
<p>I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.</p>	<p>Robert Folliard , III . <i>Assistant Secretary</i></p> <p>10/07/2020</p>

Attachments