

Federal Communications Commission

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility ID: File	13989 00000	Service: DTV 25187	Call Sign:	WAVE	Channel: 36 (UHF)
Number:					
FRN: 00	18223693	Date	11/30		
		Submitted:	/2020		

Applicant Name, Type, and Contact Information

Information

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

Reimbursement Contact Name and Information Reimbursement Contact Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Preparer Contact Name and Information Contact Applicant	Preparer Contact Name and Information			
	Address	Phone	Email	
internation	The Preparer is same as the reimbursement contact.			

Broadcaster	Question	Response
Information		
and		
Transition		
Plan		

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

Auxiliary	Add Transmitter Informat	ion			
Transmitter	Section	Question	Response		
	Existing Transmitter Description	Type of change	Purchase New		
		Type of change Purchange Vse Auxilia (Backulow) Description of Use Emerge Backulow) Ownership Owner Owner N/A Site N/A Is this transmitter currently shared with another station? No Is this transmitter currently in operating condition? Yes Manufacturer Interview	Auxiliary (Backup)		
		Description of Use	Emergency Backup		
		Owner Site Is this transmitter currently shared with another station? Is this transmitter currently in operating	Owned		
			N/A		
			N/A		
			No		
			Yes		
	Existing Transmitter	Manufacturer			
	Manufacturer and Type	Model	Ranger		
		Year	2009		
		Туре	Solid State		
		Solid State Cooling	Air Cooled		
		Solid State Power Capacity	2009 Solid State		

Auxiliary	New Transmitter Costs				
Transmitter	Section	Question	Response		
	New Transmitter	Use	Auxiliary (Backup)		
		Change Type	Purchase New		
		Is this a request for upgraded equipment? Manufacturer Model Transmitter Type	No		
			UAXTE-2R 37		
			Solid State		
	Solid State Cooling Solid State Power capacity	Air Cooled			
		Solid State Power capacity	1.2 kW		
		Justification for New Transmitter	Existing transmitter can not be retuned EOL letter attached		

Auxiliary	Other Transmitter Costs		Response3V)NoYesYes			
Transmitter	Section	Question	Response			
	Electrical Service	Service Entrance (3 phases 800A 208V) Switchgear (industrial 800 amp) Transformer (480V)	No			
			Yes			
			Yes			
	Power Rigid Conduit and Wiring Size	150 kVA				
		No				
		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
	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

Other Transmitter Cost Not Listed

AuxiliaryOther Transmitter CoTransmitterInformation not provided.

Primary	Existing Transmitter Infor	cisting Transmitter Information				
Transmitter	Section	Question	Response			
	Existing Transmitter Description	Type of change	Purchase New			
		Use	Primary (Main)			
		Description of Use	N/A			
		Ownership	Owned			
		Owner	N/A			
		Site	N/A			
		Is this transmitter currently shared with another station?	No			
		Is this transmitter currently in operating condition?	Yes			
	Existing Transmitter	Manufacturer				
	Manufacturer and Type	Model	Sigma			
		Year	2003			
		Туре	Inductive Output Tube			
		IOT Power Type	Single			
		Power Capacity	30 kW			

Existing Transmitter Information

Primary	New Transmitter Costs			
Transmitter	Section	Question	Response	
	New Transmitter	Use	Primary (Main)	
		Change Type	Purchase New	
		Is this a request for upgraded equipment?	Yes	
		Manufacturer		
		Model	ULXTE-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	Other Transmitter Costs		
Transmitter	Section	Question	Response
	Electrical Service	Service Entrance (3 phases 800A 208V)	No
		Switchgear (industrial 800 amp)	Yes
		Transformer (480V)	Yes
		Power	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
	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

Brimary Other Transmitter Cost Not Listed

Primary Transmitter	Name	Description
	Transmitter Installation	Primary Transmitter Installation
	Primary Transmitter - Additional Parts	Primary Transmitter - Additional Parts

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

Primary	Existing Antenna Information			
Antenna	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	
		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 Manufacturer and Types	Class	Full Power	
		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

Other Antenna Costs

Primary Antenna

Section	Question	Response
Combiner for Shared Antenna	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
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	Yes
	transmission line and antenna?	

Enter a list of RF channel numbers.

RF Channel Number

14

36

Primary Other Antenna Cost Not Listed

Antenna Information not provided.

Interim	New Antenna Costs			
Antenna	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	
		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	
			1	

Interim Antenna Section Question Response **Combiner for Shared** Do you need a Combiner for a Shared No Antenna Antenna? Туре Number of channels supported N/A N/A Frequencies of channels supported N/A Frequency Do you need a combiner output splitter N/A /switcher for dual feed lines? **Elbow Complex** Do you require the separate purchase of No the Elbow Complex? Broadband or Single Channel? N/A Feed Line Size N/A Do you require the separate purchase of **Side Mount Brackets** No side mount brackets for an antenna? **Pattern Scatter Analysis** Do you require separate purchase of No pattern scatter analysis for a side mount high or medium power antenna?

Other Antenna Costs

Sweep	Test
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Other Antenna Cost Not Listed

Antenna Information not provided.

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

Primary Existing Transmission Line

Transmission

sion Line Section	Question	Response
Existing Transmissio Line Description	n 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 Transmissio		Andrew
Line Manufacturer an Type	а 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

Primary	Other Transmission Line Expenses Not Listed		
Transmissic	nLine	Description	
	Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line	Nitrogen required to dry transmission line	

Interim New Transmission Line

Transmissio	n Line Section	Question	Response
	New Transmission Line Costs	Use	Interim
		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		
Transmissio	nLine	Description	
	Interim Transmission Line Other	Other expenses required for operation of	
	Expenses	interim transmission line	

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

Existing Tower

Primary	Existing Tower			
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	Do you have a tower registration number?	Yes	
	Structure Registration	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 Modification Costs

Tower

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

Primary Tower Rigging Costs

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

Other Tower Expenses Not Listed Primary Tower

Information not provided.

Outside	Section	Question	Response
Professional	I 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 Services	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

Other Professional Services Expenses Not Listed Professional Services roostsided.

Other	Section	Question	Response
Expenses	AM Pattern Disturbance	Is an Impact Study needed?	No
		Is Remediation needed?	No
	Facility Expenses	Name	N/A
		Other Distributed Transmission System Expenses Not listed	N/A
		Name	N/A
		Is Notification of a Medical Facility required as a result of DTV broadcasting?	Yes
	Permit and 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 Not Listed

Other	Other Expenses Not Listed				
Expenses	Name	Description			
	Security	Armed security provided by vendor to the equipment shelter site			

Transmitters

Cost Information

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Transmitter ULXTE-50	\$1,049,867.35	\$1,092,979.60		\$921,843.53	
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	\$812.50	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	\$9,243.41	N/A
Transmitter Installation	\$37,988.00	\$37,988.00	Please see WAVE Primary Transmitter - Installation Budget Revision Justification Letter	\$37,988.00	N/A

Primary					
Transmitter - Additional Parts	\$316.85	\$316.85	Please see Estimated Cost Justification WAVE-110- 1st Primary Transmitter - Additional Parts v0	\$316.84	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	\$867,114.32	N/A
Auxiliary Transmitter UAXTE-2R 37	\$190,562.50	\$121,679.30		\$56,696.70	
Other Electrical Service:	\$812.50	\$812.50	Please see WAVE	\$812.50	N/A
Electrical drawings and other electrical work required for Auxiliary transmitter operation			Auxiliary Transmitter - Other Electrical Service Budget Revision Justification Letter		
Electrical drawings and other electrical work required for Auxiliary transmitter	\$25,550.00	\$24,300.00	Transmitter - Other Electrical Service Budget Revision Justification	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	\$1,240,429.85	\$1,214,658.90	N/A	\$978,540.23	N/A
Total for all systems	\$3,441,103.31	\$3,754,814.53	N/A	\$2,686,037.65	N/A

Components

Actual Information Description	File Name	
Other Electrical Service: Electrical drawings and other electrical work required for Primary transmitter operation	Component Description: Amount:	Project Management \$812.50
Transformer 3 phase/480v - 150 KVA	Component Description: Amount:	WAVE-110-1st Primary Transmitter - 3 Phase, 480 V, 300 KVA Transformer \$3,883.21
	Component Description: Amount:	WAVE-110-1st Primary Transmitter - 3 Phase, 480 V, 150 KVA Transformer \$2,485.25
Switchgear - industrial 800 amp	Component Description: Amount:	Catalyst 9300 24PT POE \$9,243.41

Transmitter Installation	Component Description: Amount:	Install New transmitter \$759.76	
	Component Description: Amount:	Labor, Material and Equipment. \$37,228.24	
Primary Transmitter - Additional Parts	Component Description: Amount:	A/R 2% 10th NET 25th \$55.33	
	Component Description: Amount:	A/R 2% 10th NET 25th \$11.70	
	Component Description: Amount:	A/R 2% 10th NET 25th \$73.78	
	Component Description: Amount:	1/2-13 x 10ft ALL THREAD GALV \$143.31	
	Component Description: Amount:	A/R 2% 10th NET 25th \$32.72	

UHF - Liquid Cooled Solid State Transmitter 21 - 31 kW	Component Description: Amount:	Transmitter \$434,479.84
	Component Description: Amount:	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: Amount:	ULXTE-40 per Quote Q-73547 \$87,716.71
	Component Description: Amount:	ULXTE-40 \$70,282.97
	Component Description:	ULXTE-40 Transmitter per Quote Q-73547
	Amount:	\$131,575.06
	Component Description:	Percent of contract amount
	Amount:	\$37,228.24

Electrical drawings and other electrical work required for Auxiliary transmitter operation	Component Description:	WAVE-150-1st Auxiliary Transmitter - Other Electrical: \$812.50
	Amount:	\$812.50
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: Amount:	Transmitter \$27,229.71
	Component Description:	UAXTE-2-E
	Amount:	Transmitter \$15,501.79
	Component Description: Amount:	UAXTE-2-E \$5,261.08
	Component Description:	Transmitter, Masł Filter Saystem,
	Amount:	Electrical, Installation & Proof \$7,891.62

Antennas

Cost Information

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

Description Interim Antenna TFU-WB24	Predetermined Cost Estimate \$157,180.00	Estimated Cost \$156,850.00	Estimated Cost Justification	Actual Cost \$6,400.00	Actual Cost Justification
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	\$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	\$1,220,778.37		\$1,027,746.78	
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

Sweep test of existing antenna	\$6,730.00	\$25,600.00	Estimated Cost Justification WAVE-210- Primary Antenna - Sweep Test v0	\$11,840.00	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	\$478,954.60	N/A
Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)	\$16,850.00	\$30,623.40	See Estimated Cost Justification WAVE-210- Primary Antenna - Elbow Complex V0	\$30,623.40	N/A
Combiner output splitting /switching for dual feed lines, if applicable	\$126,000.00	\$149,104.50	See Estimated Cost Justification WAVE-210- Primary Antenna - Combiner Output Splitting Switching for Dual Lines V0	\$23,689.50	N/A
Sub-total	\$1,158,960.00	\$1,377,628.37	N/A	\$1,034,146.78	N/A
Total for	\$3,441,103.31	\$3,754,814.53	N/A	\$2,686,037.65	N/A

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.	
New combiner, cost per channel (without antenna)	Component Description:	WAVE-210- Primary Antenna - Combiner Output Splitting/Switching for Dual Lines
	Amount:	\$34,837.50
	Component Description:	WAVE-210- Primary Antenna - Combiner Output Splitting/Switching for Dual Lines
	Amount:	\$69,675.00
	Component Description:	Combiner RF Accessories Stage 2,3,5 Services
	Amount:	\$162,690.74
	Component Description: Amount:	Combiner \$52,745.30
	Component Description: Amount:	Combiner \$162,690.74

Sweep test of existing antenna	Component Description: Amount:	WAVE-210- Primary Antenna - Sweep Test \$1,600.00
	Component Description:	WAVE-210- Primary Antenna - Sweep Test
	Amount:	\$3,200.00
	Component Description:	WAVE-210- Primary Antenna - Sweep Test
	Amount:	\$640.00
	Component Description: Amount:	Other \$6,400.00

UHF - High Power Top Mount (200-1000 kW), Two Station broadband panel antenna, elliptically or circularly polarized	Component Description: Amount:	ANTENNA-UHF HIGH POWER TOP MOUNT \$129,937.50
	Component Description:	T/L 7-75 EIA Length 15' to 20' Fixed FLG
	Amount:	\$3,799.50
	Component Description:	ANTENNA - UHF HIGH POWER TOP MOUNT
	Amount:	\$259,875.00
	Component Description:	ANTENNA - UHF HIGH POWER TOP MOUNT
	Amount:	\$51,975.00
	Component Description:	WAVE-210- WAVE-210- Primary Antenna - UHF High Power Top Mount, Two Station Broadband, E- POLL
	Amount:	\$24,327.00
	Component Description: Amount:	Conn 7-75 ANCH ADPTR DIE/MYAT \$9,040.60
	1	

Elbow complex, broadband, at antenna input, per 7 3/16. feedline (if needed)	Component Description:	WAVE-210- Primary Antenna - Elbow Complex
	Amount:	\$7,155.00
	Component Description:	WAVE-210- Primary Antenna -
	Amount:	Elbow Complex \$14,310.00
	Component Description:	Elbow Complex 7- 75 Broadband Digit Wave/Wlky
	Amount:	\$4,293.00
	Component Description:	IN Sales Tax - Invoice 601014
	Amount:	\$2,003.40
	Component Description:	WAVE-210- Primary Antenna - Elbow Complex
	Amount:	\$2,862.00
Combiner output splitting /switching for dual feed lines, if applicable	Component Description:	WAVE-210- Primary Antenna -
		Combiner Output Splitting/Switching for Dual Lines
	Amount:	\$13,935.00
	Component Description:	IN Sales Tax- Invoice 567007
	Amount:	\$9,754.50

Transmission Line

Cost Information

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Interim Transmission Line	\$220,650.00	\$141,561.80		\$2,308.77	
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	\$2,058.77	N/A
Primary Transmission Line	\$26,701.38	\$26,701.38		\$24,778.48	
Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line	\$26,701.38	\$26,701.38	see Estimated Cost Justification WAVE-310- Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line v3	\$24,778.48	N/A
Sub-total	\$247,351.38	\$168,263.18	N/A	\$27,087.25	N/A

Total for all	\$3,441,103.31	\$3,754,814.53	N/A	\$2,686,037.65	N/A
systems					

Actual Information Description	File Name	
Interim Transmission Line	Component Description:	Other
Other Expenses	Amount:	\$250.00

Rigid Transmission Line -		
copper, 6 1/8" broadband	Component Description:	Rent Cyl Ind Large
		Acetylene
	Amount:	\$31.02
	Component Description:	Nitrogen Industrial
		200 CGA 580
	Amount:	\$163.82
	Component Description:	RG-223/U 50 OHN COAX-
		BTACKJEACKE
	Amount:	\$1,620.00
	Component Description:	Acetylene IND
	Amount:	\$173.51
	Component Description:	Rent Cyl Ind Large
	Amount:	Acetylene \$33.54
		\$0010 I
	Component Description:	Cylinder Rental
		(acetylene,
		nitrogen, oxygen, other)
	Amount:	\$36.88
	Component Description:	Invoice moved to correct budget
		category.
	Amount:	N/A
Transmission Line - Other		
Expenses Not Listed -	Component Description:	Rent Cyl Ind Large
	Component Description:	Rent Cyl Ind Large Acetylene

Component Description:	WAVE-380-Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line \$3,776.50
Component Description:	WAVE-380-Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line \$4,750.50
Component Description: Amount:	IN Sales Tax - Invoice 648005 \$253.05
Component Description:	WAVE-380-Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line \$7,553.00
Component Description: Amount:	Rent Cyl Ind Large Nitrogen \$70.91
Component Description: Amount:	Nitrogen Industrial 200 \$84.43

Component Description: Amount:	WAVE-380-Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line \$1,510.60
Component Description: Amount:	IN Sales Tax - Invoice 599009 \$744.52
Component Description: Amount:	"WAVE-310- Primary Transmission Line - Other Expenses Not LIsted - Nitrogen for Transmission Line-" \$63.09
Component Description: Amount:	WAVE-380-Primary Transmission Line - Other Expenses Not Listed - Nitrogen for Transmission Line \$1,595.40
Component Description:	T/L 7-75 EIA Lenght 5' to 10' Fixed Flg
Amount:	\$3,615.00

Component Description:	"WAVE-310-
	Primary
	Transmission Line
	Other Expenses
	Not Listed -
	Nitrogen for
	Transmission Line"
Amount:	\$26.49
Component Description:	WAVE-310-Primary
	Transmission Line
	Other Expenses
	Not Listed -
	Nitrogen for
	Transmission Line
Amount:	\$40.46
Component Description:	IN Sales Tax -
-	Invoice 640002
Amount:	\$598.50

Tower Equipment and Rigging Costs

Cost Information

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Tower GTOWER	\$495,100.00	\$661,776.00		\$470,861.50	
Structural engineering tower load study for well documented tower	\$12,600.00	\$12,000.00	N/A	\$8,662.50	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$150,000.00	N/A	N/A	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
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	\$348,199.00	N/A
Sub-total	\$495,100.00	\$661,776.00	N/A	\$470,861.50	N/A
Total for all systems	\$3,441,103.31	\$3,754,814.53	N/A	\$2,686,037.65	N/A

Actual Information Description	File Name	
Structural engineering tower load study for well documented tower	Component Description:	CLASS IV RIGGING PLAN REVIEW
	Amount:	\$3,000.00
	Component Description:	WAVE-410- Existing Primary Tower - Structural Engineering Tower Load Study \$162.50
	Amount.	ψ102.30
	Component Description:	Tower Service - Mapping of WAVE Tower for Repack
	Amount:	\$5,500.00
Minor tower reinforcement /modifications	Information not provided.	
Tower Helicopter Lift	Component Description:	WAVE-410- Existing Primary
	Amount:	Tower - Helicopter Lift- \$28,450.00
	Component Description:	WAVE-410- Existing Primary Tower - Helicopter
	Amount:	Lift- \$43,500.00
	Component Description:	WAVE-410- Existing Primary Tower - Helicopter
	Amount:	Lift \$42,050.00

Component Description:	Tower Service \$71,550.00
Component Description:	Customer deposit
	for Repack Interim Antenna Installation Services
Amount:	\$34,925.00
Component Description: Amount:	REPAIR YARD \$2,423.00
Component Description: Amount:	Tower Service \$102,950.00
Component Description: Amount:	Interim Antenna Installation \$29,851.00
	Amount:Component Description:Amount:Component Description:Amount:Component Description:Amount:Component Description:Amount:

Outside Professional Services

Cost Information

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Outside Professional Services	\$207,870.00	\$248,896.00		\$121,759.81	
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	\$3,526.84	N/A
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
Project management of the transition	\$94,010.00	\$144,675.00	Widelity Strategic Support Quote	\$113,641.14	N/A
Sub-total	\$207,870.00	\$248,896.00	N/A	\$121,759.81	N/A
Total for all systems	\$3,441,103.31	\$3,754,814.53	N/A	\$2,686,037.65	N/A

Actual Information	
Description	File Name

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 (Main)
	Amount: Component Description: Amount:	\$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:	WAVE-530-RF Eng - Construction Permit Application \$700.00
	Component Description: Amount:	FCC Form 2100 Construction Permit Application \$2,250.00
Perform engineering study for new channel assignment and antenna development	Component Description:	Engineering study work for new channel assignment and antenna
	Amount:	development \$1,375.00

Component Description: Amount:	Engineering study work for new channel assignment and antenna development; \$250.00
Component Description: Amount:	WAVE-530-RF Eng - Engineering Study for New Channel Assignment \$116.67
Component Description:	Engineering study work for new channel assignment and antenna development \$125.00
Component Description: Amount:	WAVE-530-RF Eng - Engineering Study for New Channel Assignment \$158.34
Component Description: Amount:	WAVE-530-RF Eng - Engineering Study for New Channel Assignment \$418.50
Component Description: Amount:	Review various materials \$1,200.00

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.	
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:	\$3,176.20
	Component Description:	Project Management
	Amount:	\$415.80
	Component Description:	Project Management

Component Description: Amount:	Project Management \$84.70
Component Description: Amount:	Project Management \$338.81
Component Description: Amount:	Project Management \$87.26
Component Description: Amount:	Project Management \$7,216.15
Component Description: Amount:	Project management \$3,142.70
Component Description: Amount:	Project management \$7,256.60
Component Description: Amount:	Project Management \$5,274.65
Component Description: Amount:	Project Management \$1,965.45
Component Description: Amount:	Project Management \$2,145.70

Component Description: Amount:	Project Management \$3,544.40
Component Description: Amount:	Project Management \$3,777.30
Component Description: Amount:	Project Management \$4,188.25
Component Description: Amount:	Project Management \$2,678.35
Component Description: Amount:	Project Management \$5,507.15
Component Description: Amount:	Project Management \$6,604.75
Component Description: Amount:	Project Management \$3,614.95
Component Description: Amount:	WAVE-510-Project Management: \$723.80 \$723.80
Component Description: Amount:	Project Management \$110.36

Component Description: Amount:	Project Management \$4,897.00
Component Description: Amount:	Repack Engineering \$795.15
Component Description: Amount:	Project Management \$87.26
Component Description: Amount:	Project Management \$4,384.10
Component Description: Amount:	Project management \$8,223.05
Component Description: Amount:	SYSTEM, WNDU U32 D42 PH1 \$110.36
Component Description: Amount:	Project Management \$3,158.80
Component Description: Amount:	Project Management \$6,348.90
Component Description: Amount:	Project Management \$4,158.70

Component Description: Amount:	Project Management \$43.63
Component Description: Amount:	Project Management \$2,963.45
Component Description: Amount:	Project Management \$4,222.05
Component Description: Amount:	Project Management \$1,463.00
Component Description: Amount:	Project Management \$4,216.85

Other Expenses

Cost Information

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cos Justificatio
Other Expenses	\$91,392.08	\$83,592.08		\$53,642.08	
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
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	\$40,256.38	\$40,256.38	see Estimated Cost Justification WAVE-610- Equipment Delivery and Handling v5	\$38,231.44	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	\$2,849.44	\$2,849.44	see Estimated Cost Justification WAVE-610- Disposal Costs v2	\$2,432.18	N/A

MVPD Notification of Channel Change	\$0.00	\$0.00	N/A	N/A	N/A
DTV Medical Facility Notification	\$11,550.00	\$3,750.00	Group quote attached	\$3,750.00	N/A
Sub-total	\$91,392.08	\$83,592.08	N/A	\$53,642.08	N/A
Total for all systems	\$3,441,103.31	\$3,754,814.53	N/A	\$2,686,037.65	N/A

Actual Information Description	File Name	
Security	Component Description: Amount:	Security Services \$1,625.40
	Component Description: Amount:	Guard Services \$1,760.86
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: Amount:	Other Freight and Shipping \$6,217.99

Component Description: Amount:	10K 55' CAB SHOOTING BOOM FORKLIFT \$3,380.07
Component Description: Amount:	Other Freight and Shipping \$2,010.78
Component Description: Amount:	IN Sales Tax - Invoice 649008 \$140.75
Component Description: Amount:	IN Sales Tax - Invoice 614039 \$908.34
Component Description: Amount:	Other Freight and Shipping \$12,976.31
Component Description: Amount:	15' Single Manlift S/P \$914.64
Component Description: Amount:	10K 55' shooting boom forklift \$3,638.06
Component Description:	1 Waste Container 6 Cu Yd \$700.57
Component Description: Amount:	15' SINGLE MANLIFT S/P \$460.44

Component Description: Amount:	15' SINGLE MANLIFT S/P \$858.65
Component Description: Amount:	IN Sales Tax - Invoice 641033 \$435.25
Component Description: Amount:	15' Single Manlift S/P \$1,198.89
Component Description: Amount:	25-26' ELECT SCISSOR NARROW \$1,188.34
Component Description: Amount:	Single Manlift \$1,166.28
Component Description:	10K 55' CAB Shooting Boom Forklift
Amount:	\$4,061.01

Disposal Costs (for equipment and other waste, net of any salvage value)	Component Description: Amount:	Pickup Service \$645.29
	Component Description:	1 Waste Container 8 Cu Yd, 2 Lifts Per
	Amount:	Week \$361.31
	Component Description: Amount:	1 Waste Container \$366.89
	Component Description:	Wave 3 TV 725 S Floyd st CS A171992022
	Amount:	\$129.78
	Component Description: Amount:	Pickup Service \$234.51
	Component Description: Amount:	VACUUM FEE WITH NO SOLIDS \$694.40
	Component Description: Amount:	1 Waste Container \$711.08
MVPD Notification of Channel Change	Information not provided.	
DTV Medical Facility Notification	Component Deceristics	Modical
	Component Description: Amount:	Medical Notification Mailing \$3,750.00

Cost Information	Grand Total				
		Predetermined Cost Estimate	Estimated Cost	Actual Cost	
	Total for all systems	\$3,441,103.31	\$3,754,814.53	\$2,686,037.65	

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

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

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

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

Certification	Section	Question	Response
	Submission of Actual Cost Documentation Statements	WILLFUL FALSE, FRAUDULENT, OR FICTITIOUS STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISIONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE AND/OR FRAUDULENT STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT (U.S. CODE, TITLE 31, SECTIONS 3729-3733).	
		 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).
- 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.	
an au name	are, under penalty of perjury, that I am thorized representative of the above- d applicant for the Authorization(s) ied above.	Robert J. Folliard , III Assistant Secretary 11/30/2020

Attachments

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