

Federal Communications Commission

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility 69444	Service: DTV	Call	WUNM-TV	Channel: 28 (UHF)
ID:		Sign:		
File 000	027173			
Number:				
FRN: 000191006	6 Date	02/26		
	Submitted:	/2019		

Applicant Name, Type, and Contact Information

Applicant Information

Applicant	Address	Phone	Email	Applicant Type
University of North Carolina Doing Business As: University of North Carolina	PO Box 14900 Research Triangle Park, NC 27709 United States	+1 (919) 549- 7000	fcc_notice@unctv. org	Government Entity

Reimbursement Contact Name and Information Reimbursement Contact Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Contact Name and Information

Contact Information	Applicant	Address	Phone	Email
	Donald Smith	Donald Smith	+1 (919)	dsmith@unctv.
	Director of New Technologies	10 T.W. Alexander	549-7025	org
	Compliance & Planning	Drive		
	University of North Carolina	Research Triangle		
	Center for Public Television	Park, NC 27709		
		United States		

Broadcaster	Question	Response
Information and Transition Plan	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.	No
	Briefly describe transition plan	The transition plan is to construct a temporary interim facility at the existing site. The interim facility would be used when operation on the new channel begins. After that the necessary changes would be made to the primary transmission system.

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

Auxiliary	Add Transmitter Information				
Transmitter	Section	Question	Response		
	Existing Transmitter Description	Type of change	Purchase New		
		Use	Auxiliary (Backup)		
		Description of Use	Aux		
		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	LU2500ATD		
		Year	2008		
		Туре	Solid State		
		Solid State Cooling	Air Cooled		
		Solid State Power Capacity	2.5 kW		

Add Transmitter Information

Auxiliary	New Transmitter Costs				
Transmitter	Section	Question	Response		
	New Transmitter	Use	Auxiliary (Backup)		
		Change Type	Purchase New		
		Is this a request for upgraded equipment?	No		
		Manufacturer			
		Model	ULXTE-10		
		Transmitter Type	Solid State		
		Solid State Cooling	Liquid Cooled		
	Solid State Power capacity	6 kW			
		Justification for New Transmitter	The transmitter support company has indicated that they may be able to provide re- channelization proposals for some models. At this time they have failed to provide a proposal. See attachment for further details.		

Auxiliary	Other Transmitter Costs				
Transmitter	Section	Question	Response		
	Electrical Service	Service Entrance (3 phases 800A 208V)	No		
		Switchgear (industrial 800 amp)	No		
		Transformer (480V)	Yes		

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	Power	150 kVA
	Rigid Conduit and Wiring	Yes
	Size	2 inches
	Length	100.0 feet
	Other Electrical Service	Yes
	Description	Electrical feed disconnects and other items necessary to meet electrical code requiremen
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	Туре	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Auxiliary Other Transmitter Cost Not Listed

Transmitter Information not provided.

Primary	Existing 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	HP50DDW		
		Year	2005		
		Туре	Inductive Output Tube		
		IOT Power Type	Тwo		
		Power Capacity	20 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	29.6 kW			
		Justification for New Transmitter	The transmitter support company has indicated the transmitter is obsolete and will not be able to provide re- channelization services for the transmitter. See attached letter.		

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	Yes		

	Size	2 inches
	Length	100.0 feet
	Other Electrical Service	Yes
	Description	Electrical feed disconnects and other items necessary to meet electrical code requirements
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	Туре	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Primary Other Transmitter Cost Not Listed

Transmitter Information not provided.

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?	No	
		Is the existing antenna directional?	Yes	
		Is antenna in operating condition?	Yes	
		Is antenna located on or in close proximity to an antenna farm?	No	
	Existing Antenna	Class	Full Power	
	Manufacturer and Type	Mounting	Side Mount	
		Antenna position in stack	Not in Stack	
		Polarization	Elliptical	
		Туре	Slotted Coaxial	
		Number of Stations Supported	N/A	
		Number of Panels	N/A	
		Design power capacity in use	N/A	
		Lower Limit	N/A	
		Upper Limit	N/A	
		Other Antenna Type	N/A	
		ERP: (Effective Radiated Power)	100.0 kW	

Manufacturer	
Model	TFU-14DSC /VP-R P230
Year	2009

Primary	New Antenna Costs				
Antenna	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?	No		
-		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	Side Mount		
		Antenna position in stack	Not in Stack		
		Polarization	Elliptical		
		Туре	Slotted Coaxial		
		Number of Stations Supported	N/A		
		Number of Panels/Bays	N/A		
		Lower Limit	N/A		
		Upper Limit	N/A		
		Design power capacity in use	N/A		
		Other Antenna Type	N/A		
		ERP: (Effective Radiated Power)	700.0 kW		
		Manufacturer			
			1		

Model	TFU-28DS0 /VP-R P230
Year	2019
Justification for New Antenna	The antenna is a single channel slotted pylon style antenna. It cannot operate on a channel other than what it was designed, channel 19. The only viable option is to replace the antenna.

Other Antenna Costs

Primary Antenna

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	No
	Туре	
	Number of channels supported	N/A
	Frequencies of channels supported	N/A
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	N/A
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	Single Channel

	Feed Line Size	6 1/8 inches inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	Yes
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	Yes
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Primary Other Antenna Cost Not Listed

Antenna Informatio

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?	No		
		Is antenna directional?	No		
		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 Panel		
		Number of Stations Supported	1		
		Number of Panels/Bays	8		
		Lower Limit	470.00 MHz		
		Upper Limit	698.00 MHz		
		Design power capacity in use	15.0 %		
		Other Antenna Type	N/A		
		ERP: (Effective Radiated Power)	60.0 kW		
		Manufacturer			
		Model	TUA-O4-2 /8-S		
		Year	2001		

Interim	Other Antenna Costs			
Antenna	Section	Question	Response	
	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	

Interim Other Antenna Cost Not Listed

Antenna Information not provided.

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

Interim New Transmission Line

Transmission

ⁿ Section	Question	Response
New Transmission Line	Use	Interim
Costs	Description of Use	N/A
	Change Type	Purchase New
	Туре	Flexible Air
	Diameter	4 inches
	Segment Length	N/A
	Other Segment Length	
	Number of parallel runs	1
	Length	600 feet per run
		New Transmission Line CostsUseDescription of UseChange TypeTypeDiameterSegment LengthOther Segment LengthNumber of parallel runs

Justification for New Transmission Line	A 2nd
	antenna
	installation
	is required
	in order to
	install the
	new
	antenna and
	keep the
	station on
	the air. The
	station owns
	а
	broadband
	panel
	antenna that
	can be used
	but needs
	transmission
	line to feed
	it.

Other Transmission Line Expenses Not Listed Transmission Line

sion	Description
Transmission line hangers	Hanger kits for securing transmission line to tower
Grounding kits	Ground Kits
Connectors	Connectors for ends of transmission line
Hoisting grip kits	Kit to lift line and attach to the tower

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 Description	Type of change	Move Equipment	
		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?	Unknown	
		Is tower compliant with Rev G?	Unknown	
	Existing Tower Structure Registration	Do you have a tower registration number?	Yes	
		ASR Number	1011271	
	Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	35° 06' 16.0" N-	
		Longitude (NAD83)	077° 20' 11.0" W-	
		Overall Structure Height	1988.82 feet	
		Support Structure Height	1878.59 feet	
		Ground Elevation Above Mean Sea Level (AMSL)	45.93 feet	
		Structure Type	TOWER - Free Standing or Guyed Structure	

Tower Owner	EASTERN NORTH CAROLINA BROADCASTING CORPORATION
Date Constructed	01/01/1981

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
35582	WYDO	DTV
36950	WRNS-FM	FM
18334	WCTI-TV	DTV

Primary Tower Rigging Costs

Tower

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

Primary Other Tower Expenses Not Listed

Tower Information not provided.

Outside Professional	Section	Question	Response
	Services Costs Outside Project Management Services	Do you require outside project management services?	Yes
		Number of Hours	120
		Explanation	Because the transmission site is owned by the State of North Carolina, it is subject to various state construction project rules. One rule is the hiring of a designer to create submittals for project review and approval by the state
	Outside RF consulting Engineering Services	Perform engineering study for new channel assignment and antenna development	Yes
		Prepare engineering section of Form FCC Construction Permit Application	Yes
		For Auxiliary Facility	No
		For Main Facility	Yes
		Prepare engineering section of Form FCC License to Cover Application	Yes
		For Auxiliary Facility	No
		For Main Facility	Yes
		Prepare request for Special Temporary Authority	Yes
		Quantity	1

	Do you have Distributed Transmission System engineering services?	N/A
	Critical Facility	N/A
	Terrain-Shielded Facility	N/A
Attorney and Other Outside Consulting	Prepare and file Form FCC Construction Permit Application	Yes
Services	For Auxiliary Facility	No
	For Main Facility	Yes
	Prepare and file Form FCC License to Cover Application	Yes
	For Auxiliary Facility	No
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	1
	NEPA Section 106 environmental review	No
	Environmental Assessment	No
	ASR Modification	No
	FAA Consultation (including preparation of FAA Form 7460)	No
	Negotiation of Lease and other Matter for Shared Locations	Yes
	Prepare or Review FCC Form 399 for Reimbursement	Yes
	Address transition timing and coordination issues w/ other stations and wireless providers	Yes
RF Field Engineering Services	Comprehensive coverage verification via field study	No
	RF exposure measurements	No
	Additional Field Engineering Service	No
	Number of Days	N/A

Outside	Other Professional Services Expenses Not Listed		
Professional	Services Costs	Description	
	Additional Legal Expenses	Legal expenses for non-catalog advice and review, including transition status reports and other miscellaneous legal needs.	

Outside Other Professional Services Expenses Not Listed

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?	No
		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

Expenses Information not provided.

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	\$1,028,350.00	\$430,815.98		\$191,333.99	
Other Electrical Service: Electrical feed disconnects and other items necessary to meet electrical code requirements	\$15,000.00	\$15,000.00	Estimate for non- categorized items necessary to meet electrical code requirements	N/A	N/A
2" Rigid Conduit and Wiring (Cost per foot)	\$2,600.00	\$2,500.00	N/A	N/A	N/A
Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$24,300.00	N/A	\$1,958.60	N/A
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	N/A	N/A	N/A

UHF - Liquid Cooled Solid State Transmitter 21 - 31 kW	\$947,000.00	\$352,715.98	The estimated cost is for the approved GatesAir ULXTE-30 transmitter. The transmitter purchase has been upgraded to a ULXTE- 50. It is understood that the station is responsible for the upgrade portion of the purchase portion of the	\$189,375.39	N/A
Auxiliary Transmitter ULXTE-10	\$326,550.00	\$201,863.16		\$87,478.58	
Other Electrical Service: Electrical feed disconnects and other items necessary to meet electrical code requirements	\$24,900.00	\$24,900.00	Estimate for non- categorized items necessary to meet electrical code requirements	N/A	N/A
2" Rigid Conduit and Wiring (Cost	\$2,600.00	\$2,500.00	N/A	N/A	N/A

Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$24,300.00	N/A	\$1,958.60	N/A
UHF - Liquid Cooled Solid State Transmitter 4.9 . 6.5 kW	\$273,500.00	\$150,163.16	See antenna narrative with quotes	\$85,519.98	N/A
Sub-total	\$1,354,900.00	\$632,679.14	N/A	\$278,812.57	N/A
Total for all systems	\$2,064,813.00	\$1,223,942.14	N/A	\$382,530.75	N/A

Components

Actual Information Description	File Name	
Other Electrical Service: Electrical feed disconnects and other items necessary to meet electrical code requirements	Information not provided.	
2" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	
Transformer 3 phase/480v - 150 KVA	Component Description: Amount:	50% Transformer see quote line #16. Purchase Order for all 11 sites. \$1,958.60
Switchgear - industrial 800 amp	Information not provided.	

UHF - Liquid Cooled Solid		
State Transmitter 21 - 31 kW	Component Description:	50% Main
		Transmitter &
		Installation.
		Installation
		included w
		/Transmitter on
		Form 399.
		Transformer
		separate 399 line
		item. Purchase
		Order for all 11
		sites.
	Amount:	\$189,375.39
		\$100,010.00
Other Electrical Service: Electrical feed disconnects	Information not provided.	
and other items necessary		
to meet electrical code		
requirements		
2" Rigid Conduit and Wiring	Information not provided.	
(Cost per foot)		
Transformer 3 phase/480v -		
150 KVA	Component Description:	50% Transformer
		see quote line
		#16. Purchase
		Order for all 11
		sites.
	Amount:	\$1,958.60
		¢1,000.00
UHF - Liquid Cooled Solid		
State Transmitter 4.9 . 6.5 kW	Component Description:	50% Aux
		Transmitter &
		Installation.
		Installation
		included w
		included w
		/Transmitter on
		/Transmitter on
		/Transmitter on Form 399. Transformer
		/Transmitter on Form 399.
		/Transmitter on Form 399. Transformer separate 399 line
		/Transmitter on Form 399. Transformer separate 399 line item. Purchase

Antennas

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	Cost Justification	Actual Cost	Actual Cost Justificatio
Interim Antenna TUA-O4-2/8- S	\$96,130.00	\$6,400.00		\$0.00	
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	N/A
UHF – Broadband Panel, Side Mount Auxiliary /Interim, 60 horizontally polarized	\$0.00	\$0.00	N/A	N/A	N/A
UHF - Lower Power Side Mount, One station antenna - medium power (50- 200 kW), horizontally polarized	\$89,400.00	\$0.00	The antenna in owned by the station and is an antenna to be used in case of antenna system failure.	N/A	N/A
Primary Antenna TFU-28DSC /VP-R P230	\$184,400.00	\$182,060.00		\$77,338.80	

scatter analysis for side mount high/med power antennas (if not included in antenna base cost) UHF - High Mount, basic slot antenna, 700 kW (input, directional,, elliptically or circularly Delatized Sweep test for high power antennas input, per 6 1/8. Side mount basic slot antenna, 700 kW (input, directional,, elliptically antenna single channel, at antenna input, per 6 1/8. Side mount included in antennas single channel, at antennas input, per 6 1/8. Side mount included in antennas single channel, at antennas input, per 6 1/8. Side mount included in antennas single channel, at antennas input, per 6 1/8. Side mount included in antennas single channel, at antenna input, per 6 1/8. Side mount included in antennas single channel, at antenna input, per 6 1/8. Side mount included in antenna single channel, at antenna input, per 6 1/8. Side mount included in antenna single channel, at antenna input, per 6 1/8. Side mount included in antenna input, per 6 1/8. Side mount included in antenna input, per 6 1/8. Side mount included in antenna input, per 6 1/8. S						
Power, Side Mount, basic slot antenna, 700 kW input, directional,, elliptically or circularly polarizedAntenna narrative with attached quotesSweep test of existing antenna\$6,730.00\$6,400.00N/A\$2,880.00N/AElbow complex, single channel, at antenna\$12,300.00\$11,700.00N/A\$4,942.80N/AElbow complex, single channel, at antenna\$12,300.00\$11,700.00N/A\$4,942.80N/ASide mount brackets for high power antennas\$23,150.00\$22,000.00N/A\$7,884.00N/ASide mount antenna sincuded in antenna\$23,150.00\$22,000.00N/A\$7,884.00N/A	Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	\$5,260.00	\$5,000.00	N/A	N/A	N/A
of existing antenna Elbow \$12,300.00 \$11,700.00 N/A \$4,942.80 N/A complex, single channel, at antenna input, per 6 1/8. feedline (if needed) Side mount \$23,150.00 \$22,000.00 N/A \$7,884.00 N/A brackets for high power antennas (if not included in antenna base cost)	UHF - High Power, Side Mount, basic slot antenna, 700 kW input, directional,, elliptically or circularly polarized	\$136,960.00	\$136,960.00	Antenna narrative with attached	\$61,632.00	N/A
complex, single channel, at antenna input, per 6 1/8. feedline (if needed) Side mount \$23,150.00 \$22,000.00 N/A \$7,884.00 N/A brackets for high power antennas (if not included in antenna base cost)	Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	\$2,880.00	N/A
brackets for high power antennas (if not included in antenna base cost)	Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed)	\$12,300.00	\$11,700.00	N/A	\$4,942.80	N/A
Sub-total \$280,530.00 \$188,460.00 N/A \$77,338.80 N/A	Side mount brackets for high power antennas (if not included in antenna base cost)	\$23,150.00	\$22,000.00	N/A	\$7,884.00	N/A
	Sub-total	\$280,530.00	\$188,460.00	N/A	\$77,338.80	N/A

Components

Actual Information Description	File Name	
Sweep test of existing antenna	Information not provided.	
UHF – Broadband Panel, Side Mount Auxiliary /Interim, 60 horizontally polarized	Information not provided.	
UHF - Lower Power Side Mount, One station antenna - medium power (50-200 kW), horizontally polarized	Information not provided.	
Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	Information not provided.	
UHF - High Power, Side Mount, basic slot antenna, 700 kW input, directional,, elliptically or circularly polarized	Component Description:	See Page 1 Attachment for Detail Invoice, Quote, PO, Payment Responsibility Analysis 45% Due w/Order UHF Hi Power Side Mount w/VP \$61,632.00

Sweep test of existing		
antenna	Component Description:	See Page 1 Attachment for Detail Invoice, Quote, PO, Payment Responsibility Analysis 45% Due w/Order Sweep Test \$2,880.00
Elbow complex, single		
channel, at antenna input, per 6 1/8. feedline (if needed)	Component Description:	See Page 1 Attachment for Detail Invoice, Quote, PO, Payment Responsibility Analysis 45% Due w/Order Elbow Complex \$4,942.80
Side mount brackets for high power antennas (if not included in antenna base cost)	Component Description:	See Page 1 Attachment for Detail Invoice, Quote, PO, Payment Responsibility Analysis 45% Due w/Order Mounting Brackets

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	\$53,900.00	\$51,500.00		\$0.00	
Flexible Air Transmission Line - dielectric, 4"	\$44,400.00	\$42,000.00	N/A	N/A	N/A
Transmission line hangers	\$2,000.00	\$2,000.00	Manufacturer preliminary estimate	N/A	N/A
Grounding kits	\$200.00	\$200.00	Manufacturer preliminary estimate	N/A	N/A
Connectors	\$6,500.00	\$6,500.00	Manufacturer preliminary estimate	N/A	N/A
Hoisting grip kits	\$800.00	\$800.00	Manufacturer preliminary estimate	N/A	N/A
Sub-total	\$53,900.00	\$51,500.00	N/A	\$0.00	N/A
Total for all systems	\$2,064,813.00	\$1,223,942.14	N/A	\$382,530.75	N/A

Components

Information not provided.

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 TOWER	\$210,500.00	\$200,000.00		\$0.00	
Tall Tower (greater than 500')	\$210,500.00	\$200,000.00	N/A	N/A	N/A
Sub-total	\$210,500.00	\$200,000.00	N/A	\$0.00	N/A
Total for all systems	\$2,064,813.00	\$1,223,942.14	N/A	\$382,530.75	N/A

Components

Information not provided.

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	\$78,380.00	\$70,250.00		\$6,500.63	
Additional Legal Expenses	\$24,500.00	\$24,500.00	Estimate for legal expenses for non-catalog advice and review including transition status reports and other miscellaneous legal needs.	\$3,813.13	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	\$4,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application	\$2,365.00	\$2,250.00	N/A	N/A	N/A

Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	\$5,260.00	\$5,000.00	N/A	N/A	N/A
Prepare request for Special Temporary Authorization	\$2,050.00	\$1,500.00	N/A	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	\$1,580.00	\$1,500.00	N/A	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	\$1,862.50	N/A
Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$2,000.00	N/A	\$825.00	N/A
Address transition timing and coordination issues w/ other stations and wireless	\$2,630.00	\$2,500.00	N/A	N/A	N/A
Project management of the transition	\$18,960.00	\$18,000.00	N/A	\$0.00	N/A

Prepare and or review reimbursement form	\$2,630.00	\$2,500.00	N/A	N/A	N/A
Sub-total	\$78,380.00	\$70,250.00	N/A	\$6,500.63	N/A
Total for all systems	\$2,064,813.00	\$1,223,942.14	N/A	\$382,530.75	N/A

Components

Actual Information Description	File Name	
Additional Legal Expenses		
	Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 402.00/11 equal 36.55 as outlined on page 1 of invoice.
	Amount:	\$36.55
	Component Description:	Outside Professional Services Additional Legal Expenses
	Amount:	\$33.70
	Component Description:	Outside Professional Services Additional Legal Expenses
	Amount:	\$70.00

Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	\$105.00
Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 765.00/11 equal 69.55 as outlined on page 1 of invoice.
Amount:	\$69.55
Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 315.00/11 equal 28.64 as outlined on page 1 of invoice.
Amount:	\$28.64

Component Description:	Outside
	Professional
	Services
	Additional Legal
	Expenses Legal
	services benefit
	entire FCC
	Repack project
	across all 11 Call
	Signs/Facility IDs,
	350.00/11 equal
	31.82 as outlined
	on page 1 of
	invoice.
Amount:	\$31.82
Component Description:	Outside
Component Description:	Outside Professional
Component Description:	
Component Description:	Professional
Component Description:	Professional Services
Component Description:	Professional Services Additional Legal
Component Description:	Professional Services Additional Legal Expenses Legal
Component Description:	Professional Services Additional Legal Expenses Legal services benefit
Component Description:	Professional Services Additional Legal Expenses Legal services benefit entire FCC
Component Description:	Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project
Component Description:	Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call
Component Description:	Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs,
Component Description:	Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 368.00/11 equal 33.46 as outlined on page 1 of
	Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 368.00/11 equal 33.46 as outlined
Component Description:	Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 368.00/11 equal 33.46 as outlined on page 1 of
	Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 368.00/11 equal 33.46 as outlined on page 1 of invoice.

Outside
Professional
Services
Additional Legal
Expenses Legal
services benefit
entire FCC
Repack project
across all 11 Call
Signs/Facility IDs,
1617.10/11 equal
147.01 as outlined
on page 1 of
invoice.
\$147.01
Outside
Professional
Services
Additional Legal
Expenses Legal
services benefit
entire FCC
Repack project
across all 11 Call
Signs/Facility IDs,
67.40/11 equal
6.13 as outlined
on page 1 of
invoice.
\$6.13

Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 959.50/11 equal 87.23 as outlined on page 1 of
Amount:	invoice. \$87.23
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$852.00
Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 2594.40/11 equal 235.85 as outlined on page 1 of invoice. \$235.85

Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$105.00
Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across 10 of the 11 Call Signs /Facility IDs, 3378.88/10 equal 337.89 as outlined on page 1 of invoice. \$337.89
Component Description:	Outside Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion payable per Station: \$245.00 /11 as indicated on page 1 of Invoice \$22.27

Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$35.00
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$35.00
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$35.00
Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 2059.90/11 equal 187.26 as outlined on page 1 of invoice. \$187.26

Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$134.90
Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 3472.00/11 equal 315.64 as outlined on page 1 of invoice. \$315.64
Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	\$67.40

Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC
Amount:	Repack project across all 11 Call Signs/Facility IDs, 323.00/11 equal 29.36 as outlined on page 1 of invoice. \$29.36
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$175.00
Component Description:	Outside Professional Services Additional Legal
Amount:	Expenses \$471.80

Component Description:	Outside
	Professional
	Services
	Additional Legal
	Expenses Legal
	services benefit
	entire FCC
	Repack project
	across all 11 Call
	Signs/Facility IDs,
	572.90/11 equal
	52.08 as outlined
	on page 1 of
	invoice.
Amount:	\$52.08
Component Description:	Outside
Component Description:	Outside Professional
Component Description:	
Component Description:	Professional
Component Description:	Professional Services
Component Description:	Professional Services Additional Legal
Component Description:	Professional Services Additional Legal Expenses Invoice
Component Description:	Professional Services Additional Legal Expenses Invoice applies to all 11
Component Description:	Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations,
Component Description:	Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion payable per
Component Description:	Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion
Component Description:	Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion payable per Station: \$70.00/11 as indicated on
Component Description:	Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion payable per Station: \$70.00/11 as indicated on page 1 of Invoice
Component Description:	Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion payable per Station: \$70.00/11 as indicated on
	Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion payable per Station: \$70.00/11 as indicated on page 1 of Invoice
	Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion payable per Station: \$70.00/11 as indicated on page 1 of Invoice
	Professional Services Additional Legal Expenses Invoice applies to all 11 repack stations, amount requested reflects portion payable per Station: \$70.00/11 as indicated on page 1 of Invoice

	Component Description:	Outside Professional Services Additional Legal Expense Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 168.50/11 equal 15.32 as outlined on page 1 of invoice.
	Amount:	\$15.32
	Component Description:	Outside Professional Services Additional Legal Expenses
	Amount:	\$35.00
	Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 175.00/11 equal 15.91 as outlined on page 1 of invoice. \$15.91
Attorney Fees - Prepare and File request for Special Temporary Authorization	Information not provided.	
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Attorney Fees - Negotiation of lease and other matters for shared locations	Information not provided.	
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	Information not provided.	
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	Information not provided.	
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	Component Description: Amount:	Outside Professional Services Engineering Section FCC Form 2100 Construction Permit Application Primary/Main \$1,862.50
Perform engineering study for new channel assignment and antenna development	Component Description: Amount:	Outside Professional Services Engineering Study New Channel Assignment Antenna Development \$825.00
Address transition timing and coordination issues w/	Information not provided.	

Component Description:	Outside
	Professional
	Services Projec
	Management
Amount:	\$9,022.50
Information not provided.	

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 Cost Justification
Other Expenses	\$86,603.00	\$81,053.00		\$19,878.75	
MVPD Notification of Channel Change	\$5,500.00	\$5,500.00	Preliminary estimate for service	N/A	N/A
Develop and air announcement of upcoming channel change	\$2,000.00	\$2,000.00	Preliminary estimate	N/A	N/A
Equipment Delivery and Handling Charges	\$6,000.00	\$6,000.00	Preliminary estimate	N/A	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	\$61,553.00	\$61,553.00	Quotes attached	\$19,878.75	N/A
DTV Medical Facility Notification	\$11,550.00	\$6,000.00	Preliminary estimate for service	N/A	N/A
Sub-total	\$86,603.00	\$81,053.00	N/A	\$19,878.75	N/A
Total for all systems	\$2,064,813.00	\$1,223,942.14	N/A	\$382,530.75	N/A

Components

Actual Information
Description File Name

MVPD Notification of Channel Change	Information not provided.	
Develop and air announcement of upcoming channel change	Information not provided.	
Equipment Delivery and Handling Charges	Information not provided.	
Disposal Costs (for equipment and other waste, net of any salvage value)	Component Description:	50% Transmitter Removal. Purchase Order for all 11 sites.
	Amount:	\$19,878.75
DTV Medical Facility Notification	Information not provided.	

Cost	Grand Total			
Information		Predetermined Cost Estimate	Estimated Cost	Actual Cost
	Total for all systems	\$2,064,813.00	\$1,223,942.14	\$382,530.75

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. 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.	
a n	declare, under penalty of perjury, that I am n authorized representative of the above- amed applicant for the Authorization(s) pecified above.	Donald Smith Director of New Technologies Compliance & Planning
		02/26/2019

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 Levin Director of Finance and Administration 02/26/2019

Attachments

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