

Federal Communications Commission

### (REFERENCE COPY - Not for submission)

## FCC Form 399: Reimbursement Request

			-		
Facility	69292	Service: DTV	Call	WUND-TV	Channel: 29 (UHF)
ID:			Sign:		
File 0000025920					
Number:					
FRN: <b>000</b>	01910066	Date	04/02		
		Submitted:	/2020		

#### Applicant Name, Type, and Contact Information

### Applicant Information

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

#### Reimbursement Contact Name and Information Reimbursement Contact Information

Applicant	Address	Phone	Email
[Confidential]			

## Preparer Ontact Name and Information

Contact Information	Applicant	Address	Phone	Email
	Donald Smith	Donald Smith	+1 (919)	dsmith@unctv.
	Director New Technologies and	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 Information and Transition Plan	Question	Response
	Will the station be sharing equipment with	No
	Briefly describe transition plan	The transition plan is to construct an 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	Existing Transmitter Information			
Transmitter	Section	Question	Response	
	Existing Transmitter Description	Type of change	Purchase New	
		Use	Auxiliary (Backup)	
		Description of Use	Auxiliary (Backup to Main)	
		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	DHD30P1	
		Year	2001	
		Туре	Solid State	
		Solid State Cooling	Air Cooled	
		Solid State Power Capacity	7.25 kW	
		1		

### **Existing 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-20		
		Transmitter Type	Solid State		
		Solid State Cooling	Liquid Cooled		
		Solid State Power capacity	12.9 kW		
		Justification for New Transmitter	The transmitter manufacturer has indicated that components necessary to modify the transmitter for operation on its new channel are no longer available and it will not be able to provide re- channelization services for the transmitter. See attached letter		

Auxiliary	Other Transmitter Costs
Transmitter	Section

Electrical Service	Service Entrance (3 phases 800A 208V)	No
	Switchgear (industrial 800 amp)	No
	Transformer (480V)	No
	Power	N/A
	Rigid Conduit and Wiring	No
	Size	N/A
	Length	N/A
	Other Electrical Service	No
	Description	N/A
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	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	CD3300P3	
		Year	2001	
		Туре	Inductive Output Tube	
		IOT Power Type	Three	
		Power Capacity	60 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-100		
		Transmitter Type	Solid State		
		Solid State Cooling	Liquid Cooled		
		Solid State Power capacity	62.9 kW		
		Justification for New Transmitter	The transmitter manufacturer has indicated that components necessary to modify the transmitter for operation on its new channel are no longer available and it 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)	No
	Transformer (480V)	No
	Power	N/A
	Rigid Conduit and Wiring	No
	Size	N/A
	Length	N/A
	Other Electrical Service	No
	Description	N/A
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	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

Auxiliary Antenna	Existing Antenna Information			
	Section	Question	Response	
	Existing Antenna Description	Type of change	Purchase New	
		Antenna Use	Auxiliary (Backup)	
		Description of Use	Backup to main	
		Ownership	Owned	
		Owner	N/A	
		Site	N/A	
		Is the existing antenna shared with another station or stations?	No	
		Is the existing antenna directional?	No	
		Is antenna in operating condition?	Yes	
		Is antenna located on or in close proximity to an antenna farm?	No	
	Existing Antenna Manufacturer and Type	Class	Full Power	
		Mounting	Side Mount	
		Antenna position in stack	Not in Stack	
		Polarization	Horizontal	
		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)	741.0 kW	

Manufacturer	
Model	TFU- 30GTH-R O4
Year	2000

Auxiliary	New Antenna Costs			
Antenna	Section	Question	Response	
	New Antenna Description	Use	Auxiliary (Backup)	
		Description of Use	Interim Facility	
		Change Type	Purchase New	
		Is this a request for upgraded equipment?	Yes	
		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 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)	808.0 kW	
		Manufacturer		

Model	SAA30-O3 G200- ES5R-29
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 20 The only viable option is to replace the antenna.

# Auxiliary Other Antenna Costs

Auxilial y			
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

# Auxiliary Other Antenna Cost Not Listed

Antenna

Information not provided.

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?	No	
		Is the existing antenna directional?	No	
		Is antenna in operating condition?	Yes	
		Is antenna located on or in close proximity to an antenna farm?	No	
	Existing Antenna	Class	Full Power	
	Manufacturer and Type	Mounting	Top Mount	
		Antenna position in stack	Not in Stack	
		Polarization	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)	543.0 kW	

Manufacturer	
Model	ATW25HS3- ETO-20H
Year	2010

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?	No	
		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 Types	Class	Full Power	
		Mounting	Top 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)	657.0 kW	
		Manufacturer		
			1	

Model	SAA30- O4G300- ET8R-29
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 20 The only viable option is to replace the antenna.

## Primary Other Antenna Costs Antenna Section

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	8 3/16 inches inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	No
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

# Primary Other Antenna Cost Not Listed

Antenna Informatio

Information not provided.

Transmissior	Sentien	Question	Response
	Transmission Line Related Expenses	Do you have transmission line related expenses?	No

Tower	Section	Question	Response
Equipment And Rigging Costs	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	Move Equipment	
		Tower Use	Primary (Main)	
		Description of Use	N/A	
		Ownership	Owned	
		Is this tower consider Complex?	No	
		Is this tower currently shared with any other stations?	Yes	
		One or more FM, AM or TV radio broadcaster(s)	Yes	
		Others Types of Users	No	
		Is tower documented for structural analysis?	Yes	
		Is tower compliant with Rev G?	Yes	
	Existing Tower Structure	Do you have a tower registration number?	Yes	
	Registration	ASR Number	1063239	
	Coordinates (NAD83 ( North American Datum	Latitude (NAD83)	35° 54' 01.0" N-	
	of 1983))	Longitude (NAD83)	076° 20' 44.0" W-	

Overall Structure Height	1640.07 feet
Support Structure Height	1574.13 feet
Ground Elevation Above Mean Sea Level (AMSL)	5.91 feet
Structure Type	TOWER - Free Standing or Guyed Structure
Tower Owner	UNIVERSITY OF NORTH CAROLINA
Date Constructed	10/21/2010

### 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
89274	WUND-FM	FM

## 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	Yes
		For Main Facility	Yes
		Prepare engineering section of Form FCC License to Cover Application	Yes
		For Auxiliary Facility	Yes
		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	Yes
	For Main Facility	Yes
	Prepare and file Form FCC License to Cover Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	1
	NEPA Section 106 environmental review	No
	Environmental Assessment	No
	ASR Modification	Yes
	FAA Consultation (including preparation of FAA Form 7460)	Yes
	Negotiation of Lease and other Matter for Shared Locations	No
	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 Professional			
	Services Costs	Description	
	Additional Legal Expenses	Legal expenses for non-catalog advice and review, including transition status reports and other miscellaneous legal needs.	
	Tower Structural Analysis	Required by State Building Code	

### 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

Other Expenses

Name	Description
Network Switch	Cisco 52-port Gigabit Switch connects devices together on computer network by using packet switching to receive, process and forward data to destination device
Electrical Construction	Construction and modifications to the electrical infrastructure of the existing building as required to support the new transmitters
General Construction	General construction and administrative costs necessary for the installation of transmitters in an existing building

### 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-100	\$2,469,155.24	\$1,414,595.33		\$1,414,595.33	
UHF - Liquid Cooled Solid State Transmitter 62.9 kW	\$644,355.24	\$644,355.24	Remaining balance from other main transmitter expense line	\$644,355.24	N/A
UHF - Liquid Cooled Solid State Transmitter 52 - 61 kW	\$1,788,000.00	\$764,496.09	***System Notice: Estimate adjusted and locked because line has been superseded. ***A quote from Comark for a replacement IOT transmitter is attached. That quote is substantially higher than the catalog pricing amount for the proposed solid state transmitter. The proposed transmitter should be eligible for full reimbursement.	\$764,496.09	N/A

Transformer 3 phase /480v - 300 KVA	\$36,800.00	\$5,744.00	***System Notice: Estimate adjusted and locked because line has been superseded.***	\$5,744.00	N/A
Auxiliary Transmitter ULXTE-20	\$520,050.00	\$471,958.60		\$235,993.54	
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	\$494,500.00	\$470,000.00	N/A	\$234,034.94	N/A
Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$1,958.60	***System Notice: Estimate adjusted and locked because line has been superseded.***	\$1,958.60	N/A
Sub-total	\$2,989,205.24	\$1,886,553.93	N/A	\$1,650,588.87	N/A
Total for all systems	\$4,093,334.62	\$3,076,976.75	N/A	\$2,322,577.39	N/A

### Components

Actual Information Description	File Name	
UHF - Liquid Cooled Solid State Transmitter 62.9 kW	Component Description:	Main Transmitter See attach pg 1 for payment
	Amount:	details. \$644,355.24

UHF - Liquid Cooled Solid State Transmitter 52 - 61 kW	Component Description: Amount:	Main Transmitter See attachment pg 1 for payment details. \$644,355.24
	Component Description:	50% Main Transmitter & Installation. Installation included w /Transmitter on Form 399. Transformer separate 399 Line item. Purchase Order for all 11 sites. \$764,496.09
Transformer 3 phase/480v - 300 KVA	Component Description: Amount:	50% Transformer on Quote Line 16. Included with Transmitter on Invoice. Purchase Order for All 11 sites. \$5,744.00

UHF - Liquid Cooled Solid State Transmitter 8.2 - 13		
kW	Component Description:	Aux Transmitter
		See attach pg 1
		for payment
		details.
	Amount:	\$94,956.15
	Component Description:	50% Aux
		Transmitter &
		Installation.
		Installation
		included w
		/Transmitter on
		Form 399.
		Purchase Order
		for all 11 sites.
	Amount:	\$139,078.79
Transformer 3 phase/480v -		
150 KVA	Component Description:	50% Transformer
		on Quote Line 17.
		Included with
		Transmitter on
		Invoice. Purchase
		Order is for all 11
		sites.
	Amount:	\$1,958.60

#### 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	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Antenna SAA30- O4G300- ET8R-29	\$311,480.00	\$235,012.03		\$107,056.02	
Elbow complex, single channel, at antenna input, per 8 3/16. feedline (if needed)	\$15,250.00	\$14,500.00	N/A	N/A	N/A
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	N/A
UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	\$289,500.00	\$214,112.03	See Narrative with Quote	\$107,056.02	N/A
Auxiliary Antenna SAA30-O3- G200- ES5R-29	\$186,079.00	\$183,739.00		\$69,319.50	

Side mount brackets for high power antennas (if not included in antenna base cost)	\$23,150.00	\$22,000.00	N/A	N/A	N/A
Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed)	\$12,300.00	\$11,700.00	N/A	N/A	N/A
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	N/A
UHF - High Power, Side Mount, basic slot antenna, 808 kW input, elliptically or circularly polarized	\$138,639.00	\$138,639.00	See narrative with quote	\$69,319.50	N/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
Sub-total	\$497,559.00	\$418,751.03	N/A	\$176,375.52	N/A
Total for all systems	\$4,093,334.62	\$3,076,976.75	N/A	\$2,322,577.39	N/A

### Components

Actual Information Description	File Name	
Elbow complex, single channel, at antenna input, per 8 3/16. feedline (if needed)	Information not provided.	
Sweep test of existing antenna	Information not provided.	
UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	Component Description: Amount:	50% Primary Antenna included in Inv & PO Line 3. Invoice & Purchase Order are for 10 sites. \$107,056.02
Side mount brackets for high power antennas (if not included in antenna base cost)	Information not provided.	
Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed)	Information not provided.	

Sweep test of existing antenna	Information not provided.	
UHF - High Power, Side Mount, basic slot antenna, 808 kW input, elliptically or circularly polarized	Component Description:	50% Auxilliary Antenna included in Inv & PO Line 3. Invoice & Purchase Order are for 10 sites. \$69,319.50
Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	Information not provided.	

## Cost Transmission Line

**Information** 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	\$269,186.77		\$134,593.39	
Tall Tower (greater than 500')	\$210,500.00	\$269,186.77	See narrative and attached quote	\$134,593.39	N/A
Sub-total	\$210,500.00	\$269,186.77	N/A	\$134,593.39	N/A
Total for all systems	\$4,093,334.62	\$3,076,976.75	N/A	\$2,322,577.39	N/A

#### Components

Actual Information	
Description	File Name

Tall Tower (greater than 500')		
	Component Description:	50% Primary /Complex Tower Installation for Primary Antenna included in Inv & PO Line 4. Invoice & Purchase Order are for 10 sites. \$93,025.95
	Component Description:	50% Primary /Complex Tower Installation for Auxilliary Antenna included in Inv & PO Line 4. Invoice & Purchase Order are for 10 sites. \$41,567.44

## **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 Cos Justificatic
Outside Professional Services	\$93,275.00	\$204,739.64		\$145,349.21	
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	\$1,580.00	\$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
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	\$2,105.00	\$2,000.00	N/A	\$650.00	N/A

Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	\$1,812.50	N//
Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$2,000.00	N/A	\$725.00	N/#
Tower Structural Analysis	\$7,000.00	\$7,000.00	N/A	\$2,500.00	N//
Additional Legal Expenses	\$24,500.00	\$24,500.00	Preliminary estimate for legal expenses for non-catalog advice and review including transition status reports and other miscellaneous legal needs.	\$5,126.31	N/J
FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase	\$2,105.00	\$2,000.00	N/A	N/A	N/J
ASR modification (prepare FCC Form 854)	\$2,105.00	\$2,000.00	N/A	N/A	N/

Attorney Fees - Prepare and File request for Special Temporary Authorization	\$3,680.00	\$3,500.00	N/A	\$73.00	Ν
Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application	\$2,365.00	\$2,250.00	N/A	N/A	Ν
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	\$4,210.00	\$4,000.00	N/A	N/A	Ν
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	\$5,260.00	\$5,000.00	N/A	N/A	Ν
Prepare request for Special Temporary Authorization	\$2,050.00	\$1,500.00	N/A	N/A	N
Prepare and or review reimbursement form	\$2,630.00	\$2,500.00	N/A	\$102.76	N

Project management of the transition	\$18,960.00	\$137,989.64	See attachment "WUND Program Designer - Manager Narrative" for details on estimated cost Amendment #3 attached to Invoice 157570 Amendment #4 attached to Invoice 160595	\$134,359.64	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
Sub-total	\$93,275.00	\$204,739.64	N/A	\$145,349.21	N/A
Total for all systems	\$4,093,334.62	\$3,076,976.75	N/A	\$2,322,577.39	N/A

## Components

Actual Information Description	File Name
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, License to Cover Application	Information not provided.
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	Information not provided.

RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	Component Description: Amount:	Outside Prof Services Engineering Svcs Aux CP \$650.00
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) \$1,812.50
Perform engineering study for new channel assignment and antenna development	Component Description: Amount:	Outside Professional Services Engineering Study New Channel Assignment Antenna Development \$725.00
Tower Structural Analysis	Component Description: Amount:	Outside Professional Services Tower Structural Analysis See attachment page 7 for schedule of services. \$2,500.00
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, 67.40/11 equal 6.12 as outlined on page 1 of invoice. \$6.12
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$109.50
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, 402.00/11 equal 36.54 as outlined on page 1 of invoice. \$36.54

Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$182.50
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. \$52.08
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$67.40
Component Description:	Outside 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 \$6.36

Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$146.00
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$146.00
Component Description: Amount:	Outside Professional Services Additional Legal Expenses 9 /26/19 .10 ;.10x365 equal \$36.50 \$36.50
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$73.00
Component Description: Amount:	Outside Prof. Svs Additional Legal Expenses \$36.50
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$182.50

Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$70.00
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
Amount:	\$15.91
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 invoice. \$87.23
	Amount:   Component Description:   Amount: Component Description:

Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 323.00/11 equal 29.37 as outlined on page 1 of invoice. \$29.37
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: Amount:	Outside Professional Services Additional Legal Expenses \$280.00

Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 10 Call Signs/Facility IDs, 3378.88/10 for 337.89 as outlined on page 1 of invoice. \$337.89
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$597.70
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 \$22.28
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$70.00

Component Description:	Outside Professional Services Additional Legal Expenses 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. \$15.32
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$67.40
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 28.63 as outlined on page 1 of invoice. \$28.63

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 69.54 as outlined on page 1 of invoice. \$69.54
Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 1617.10/11 for 147.01 as outlined on page 1 of invoice. \$147.01
Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 368.00/11 equal 33.45 as outlined on page 1 of invoice. \$33.45

Outside Professional Services Additional Legal Expense Legal services benefit entire FCC Repack project across all 11 Call Signs/Facility IDs, 2059.90/11 for 187.26 as outlined on page 1 of invoice. \$187.26
Outside Professional Services Additional Legal Expenses \$105.00
Outside Professional Services Additional Legal Expense \$346.50
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. \$31.82

Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$33.70
Component Description: Amount:	Outside Professional Services Additional Legal Expenses \$742.80
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 for 235.86 as outlined on page 1 of invoice. \$235.86
Component Description:	Outside Professional Services Additional Legal Expenses \$70.00
Component Description:	Outside Professional Services Additional
Amount:	Legal Expenses \$140.00

FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase	Information not provided.	
ASR modification (prepare FCC Form 854)	Information not provided.	
Attorney Fees - Prepare and File request for Special Temporary Authorization	Component Description:	Outside Professional Services STA 9/27 /19 .2 x 365 equal \$73.00
	Amount:	\$73.00
Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application	Information not provided.	
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License 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 and or review		
reimbursement form	Component Description:	Outside Professional Services Prepare Reimbursement Wages & Employer Portion Social Security for Temp Employee. Tasks applicable to all 11 repack sites, amount requested reflects portion payable per site. \$102.76
Project management of the		
transition	Component Description:	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract/Invoice Summary.
	Amount:	\$4,550.14
	Component Description:	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract/Invoice Summary.
	Amount:	\$12,671.60

Component Description:	Outside Professional Svcs Proj Mgmt of Transition PO for eleven multiple sites See attach pg 2-7 for Contract /Invoice summary \$4,356.00
Component Description:	Outside Professional Services Project Management of Transition See attachment pg 3-6 for Contract/Invoice Summary. PO /Contract for all eleven transmitter sites. \$10,876.16
Component Description:	Outside Prof Svcs Proj Mgmt of Transition See attach pg. 2-5 for Contract/Invoice Summary. Amendment #3 on pg. 6. 12,800 divided by 11 equal 1,164.64 for 7 sites, 1,164.63 for 4 sites. PO/Contract for all eleven transmitter sites. \$5,651.64

Component Description:	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract/Invoice Summary. PO /Contract for all eleven transmitter sites. \$5,438.08
Component Description:	Outside Professional Services Project Management of Transition See attachment pg. 3-6 for Contract/Invoice Summary. PO /Contract for all eleven transmitter sites. \$2,499.60
Component Description: Amount:	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract/Invoice Summary. \$5,438.08

Component Description:	Outside Professional Svcs Proj Mgmt of Transition PO for eleven multiple sites See attach pg 2-7 for Contract /Invoice summary \$4,356.00
Component Description:	Outside Prof Services Project Management Contract/Invoice summary for 11 sites see attach pgs 5-15 \$2,700.00
Component Description:	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract/Invoice Summary. \$54,415.80
Component Description:	Outside Professional Services Project Management See attachment pg. 3 & 4 for Project Summary \$6,703.50

	Component Description:	Outside
		Professional
		Services Project
		Management of
		Transition See
		attachment pg. 3-6
		for Contract/Invoice
		Summary. PO
		/Contract for all
		eleven transmitter
		sites.
	Amount:	\$4,088.44
	Component Description:	Outside Proj Svcs
		Proj Mgmt of
		Transition PO for
		eleven multiple
		sites See attach pg
		3-6 for Contract
		/Invoice summary
	Amount:	\$1,592.10
	Component Description:	Outside
		Professional
		Services Project
		Management
	Amount:	\$9,022.50
	Component Description:	Outside
		Professional
		Services Project
		Management See
		attachment pg. 3 &
		4 for Project
		Summary
	Amount:	\$9,022.50
Address transition timing and coordination issues w/	Information not provided.	
other stations and wireless		
	1	

## **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	\$302,795.38	\$297,745.38		\$215,670.40	
General Construction	\$54,175.78	\$54,175.78	See the attached document WUND GC budget for additional information	\$46,320.30	N/A
Electrical Construction	\$149,987.90	\$149,987.90	See the attached document WUND GC Budget for additional information.	\$127,821.64	N/A
Network Switch	\$1,048.00	\$1,048.00	See attachment - WUND Network Switch Justification	\$1,047.97	N/A
MVPD Notification of Channel Change	\$5,500.00	\$5,500.00	Preliminary cost estimate for service	\$463.64	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 estimates	N/A	N/A

Disposal Costs (for equipment and other waste, net of any salvage value)	\$72,533.70	\$72,533.70	Invoiced amount based on competitive bid award	\$36,266.85	N/A
DTV Medical Facility Notification	\$11,550.00	\$6,500.00	Preliminary cost estimate for service	\$3,750.00	N/A
Sub-total	\$302,795.38	\$297,745.38	N/A	\$215,670.40	N/A
Total for all systems	\$4,093,334.62	\$3,076,976.75	N/A	\$2,322,577.39	N/A

# Components

Actual Information	
Description	File Name

n: General Contract See attach pg 1 for payment details by FACId/Call. See attach last page for Purchase Order Summary for multiple sites. \$749.38
n: General Contract See attach pg 1 for payment details by FACId/Call. See attach last page for Purchase Order Summary for multiple sites. \$3,746.89
n: Other Expenses General Contract See attachment pg 1 for payment details by contract /site including payment responsibility. PO for 6 sites. \$6,970.67
n: General Contract See attach pg 1 for payment details by FACId/Call. See attach last page for Purchase Order Summary for multiple sites. \$34,853.36
n

Electrical Construction		
	Component Description:	Electrical Contract See attach pg 1 for payment details by FACId/Call. See attach last page for Purchase Order Summary for multiple sites. \$11,797.27
	Component Description:	Electrical Contract See attach pg 1 for payment details by FACId/Call. See attach last page for Purchase Order Summary for multiple sites. \$104,785.00
	Component Description:	Electrical Contract See attach pg 1 for payment details by FACId/Call. See attach last page for Purchase Order Summary for multiple sites. \$11,239.37
Network Switch	Component Description:	Other Expenses Network Switch 11 Switches for total of 11,527.67 equals 1,047.97 per transmitter site.
	Amount:	\$1,047.97

MVPD Notification of Channel Change	Component Description: Amount:	MVPD Notify See attach pg. 12-13 \$5,100 for 11 sites equal 463.64 each \$463.64
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: Amount:	50 % Aux Transmitter Removal. Purchase Order is for all 11 sites. \$13,782.60
	Component Description: Amount:	50% Main Transmitter Removal. Purchase Order is for all 11 sites. \$22,484.25
DTV Medical Facility Notification	Component Description:	Other Expenses Med Notify See attachment pg. 11 for schedule of services PO for 11 sites \$3,750.00

Cost Information	Grand Total			
		Predetermined Cost Estimate	Estimated Cost	Actual Cost
	Total for all systems	\$4,093,334.62	\$3,076,976.75	\$2,322,577.39

Reimbursem	entestiatus	Response
	The facility has ceased operating on its pre- auction channel.	Yes
	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
Certification	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.	
		<ol> <li>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.</li> <li>The above-named entity acknowledges that all certifications and attached documentation are considered material</li> </ol>	
		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.	
an au name	are, under penalty of perjury, that I am horized representative of the above- d applicant for the Authorization(s) red above.	Donald Smith Director of New Technologies Compliance & Planning
		04/02/2020

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).	
		<ol> <li>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.</li> </ol>	
		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.

e ti p n	The above-named entity acknowledges that overpayments or payments in error nust be promptly efunded to the Commission.	
e is w r a r v a o o p	The above-named entity certifies that it is in full compliance with all statutes, ules, regulations and governmental equirements for which compliance is a prerequisite for obtaining the payments herein equested.	
an autho named a	e, under penalty of perjury, that I am orized representative of the above- applicant for the Authorization(s) d above.	Robert Levin Director of Finance and Administration

#### Attachments

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