Approved by OMB (Office of Management and Budget) 3060-1178

Federal Communications Commission

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility ID: **69292** | Service: **DTV** | Call Sign: **WUND-TV** | Channel: **29 (UHF)**

File Number: **0000025920**

FRN: **0001910066** | Date Submitted: **07/20/2020**

Applicant Information

Applicant Name, Type, and Contact 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 Information

Reimbursement Contact Name and Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Contact Information

Preparer Contact Name and Information

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

Broadcaster Information and Transition Plan

Question	Response
Will the station be sharing equipment with another broadcast television station or stations (e.g., a shared antenna, co-location on a tower, use of the same transmitter room, multiple transmitters feeding a combiner, etc.)? If yes, enter the facility ID's of the other stations and click 'prefill' to download those stations' licensing information.	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 Transmitter

Existing Transmitter Information

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 and Type	Manufacturer	
	Model	DHD30P1
	Year	2001
	Type	Solid State
	Solid State Cooling	Air Cooled
	Solid State Power Capacity	7.25 kW

Auxiliary Transmitter

New Transmitter Costs

Section	Question	Response
New Transmitter	Use	Auxiliary (Backup)
	Change Type	Purchase New
	Is this a request for upgraded equipment?	Yes
	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 Transmitter

Other Transmitter Costs

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
	Type	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other 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 Transmitter

Other Transmitter Cost Not Listed

Information not provided.

Primary Transmitter

Existing Transmitter Information

Section	Question	Response
Existing Transmitter Description	Type of change	Purchase New
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmitter currently shared with another station?	No
	Is this transmitter currently in operating condition?	Yes
Existing Transmitter Manufacturer and Type	Manufacturer	
	Model	CD3300P3
	Year	2001
	Type	Inductive Output Tube
	IOT Power Type	Three
	Power Capacity	60 kW

Primary Transmitter

New Transmitter Costs

Section	Question	Response
New Transmitter	Use	Primary (Main)
	Change Type	Purchase New
	Is this a request for upgraded equipment?	Yes
	Manufacturer	
	Model	ULXTE-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 Transmitter

Other Transmitter Costs

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
	Type	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Primary Transmitter

Other Transmitter Cost Not Listed

Information not provided.

Antennas

Section	Question	Response
Antenna Related 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
	Type	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-RO4
Year	2000

Auxiliary Antenna

New Antenna Costs

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
	Type	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 Antenna

Other Antenna Costs

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

Other Antenna Cost Not Listed

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 Manufacturer and Type	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	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 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?	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
	Type	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	

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 Antenna

Other Antenna Costs

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

Other Antenna Cost Not Listed

Information not provided.

Transmission Line

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

Tower Equipment And Rigging Costs

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

Primary Tower

Existing Tower

Section	Question	Response
Existing Tower Description	Type of change	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 Registration	Do you have a tower registration number?	Yes
	ASR Number	1063239
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	35° 54' 01.0" N-
	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

Tower Rigging Costs

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

Primary Tower

Other Tower Expenses Not Listed

Information not provided.

Outside Professional Services Costs

Section	Question	Response
Outside Project Management Services	Do you require outside project management services?	Yes
	Number of Hours	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 Services	Prepare and file Form FCC Construction Permit Application	Yes
	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

	Justification	N/A

Outside Professional Services Costs

Other Professional Services Expenses Not Listed

Name	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

Other Expenses

Section	Question	Response
AM Pattern Disturbance	Is an Impact Study needed?	No
	Is Remediation needed?	No
Facility Expenses	Name	N/A
	Other Distributed Transmission System Expenses Not listed	N/A
	Name	N/A
	Is Notification of a Medical Facility required as a result of DTV broadcasting?	Yes
Permit and Filing Costs	Local Zoning	No
	Non-zoning permits	No
	BLM or NFS Coordination	No
	FCC Construction Permit Minor Change	No
	FCC License to Cover Application	No
	FCC Special Temporary Authority Application	No
Other Miscellaneous Expenses	Does this relocation require paying Disposal Costs (for equipment and other waste, net of any salvage value)?	Yes
	Does this relocation require Equipment Delivery or Handling Charges not otherwise included in individual item costs?	Yes
	Does this relocation require Equipment Storage?	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

Other Expenses Not Listed

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

Cost Information

Transmitters

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Transmitter ULXTE-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	$3,082,086.75	N/A	$2,382,054.83	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 details.
	Amount:	$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: **Amount:**	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. See additl quote Q-86881 for ULXTE-16 on pages 7-13 of attachment as requested by reviewer.
	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

Cost Information

Antennas

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Antenna SAA30-O4G300-ET8R-29	**$311,480.00**	**$237,567.03**		**$116,011.02**	
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	$8,955.00	See RFS Invoice 27011674 with quote item 000020	$8,955.00	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**	**$186,294.00**		**$78,274.50**	

Sweep test of existing antenna	$6,730.00	$8,955.00	See RFS Invoice 27011674 with quote item 000020	$8,955.00	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
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
Sub-total	$497,559.00	$423,861.03	N/A	$194,285.52	N/A
Total for all systems	$4,093,334.62	$3,082,086.75	N/A	$2,382,054.83	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	**Component Description:** Primary/Main Pre Sweep See attachmt pg 4 quote item 000020 17910/2 equal 8955.00 Remainder of invoice on separate 399 categories **Amount:** $8,955.00
UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	**Component Description:** 50% Primary Antenna included in Inv & PO Line 3. Invoice & Purchase Order are for 10 sites. **Amount:** $107,056.02

Sweep test of existing antenna	**Component Description:** **Amount:**	Aux Pre Sweep see attach pg 4 quote item 000020 17910/2 equal 8955.00 Remainder of invoice on separate 399 categories $8,955.00
UHF - High Power, Side Mount, basic slot antenna, 808 kW input, elliptically or circularly polarized	**Component Description:** **Amount:**	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.	
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.	

Cost Information

Transmission Line

Information not provided.

Cost Information

Tower Equipment and Rigging Costs

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Tower TOWER	**$210,500.00**	**$269,186.77**		**$176,160.83**	
Tall Tower (greater than 500')	$210,500.00	$269,186.77	See narrative and attached quote	$176,160.83	N/A
Sub-total	$210,500.00	$269,186.77	N/A	$176,160.83	N/A
Total for all systems	$4,093,334.62	$3,082,086.75	N/A	$2,382,054.83	N/A

Components

Actual Information Description	File Name

Tall Tower (greater than 500')	**Component Description:**	50% Tower Aux Install Initial 50% paid invoice 27011328 Remainder of invoice on separate 399 categories
	Amount:	$41,567.44
	Component Description:	50% Primary /Complex Tower Installation for Primary Antenna included in Inv & PO Line 4. Invoice & Purchase Order are for 10 sites.
	Amount:	$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.
	Amount:	$41,567.44

Cost Information

Outside Professional Services

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cos Justificatic
Outside Professional Services	**$93,275.00**	**$204,739.64**		**$145,349.21**	
Tower Structural Analysis	***$7,000.00***	$7,000.00	N/A	$2,500.00	N/A
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/A
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/A
ASR modification (prepare FCC Form 854)	$2,105.00	$2,000.00	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
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/A
Perform engineering study for new channel assignment and antenna development	$7,360.00	$2,000.00	N/A	$725.00	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
Prepare and or review reimbursement form	$2,630.00	$2,500.00	N/A	$102.76	N/A
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

Attorney Fees - Prepare and File request for Special Temporary Authorization	$3,680.00	$3,500.00	N/A	$73.00	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 - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	$4,210.00	$4,000.00	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	$3,082,086.75	N/A	$2,382,054.83	N/A

Components

Actual Information Description	File Name	
Tower Structural Analysis	**Component Description:**	Outside Professional Services Tower Structural Analysis See attachment page 7 for schedule of services.
	Amount:	$2,500.00
Additional Legal Expenses		

Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$109.50
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, 402.00/11 equal 36.54 as outlined on page 1 of invoice.
Amount:	$36.54
Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$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.
Amount:	$52.08
Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$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
Amount:	$6.36
Component Description:	Outside Prof. Svs Additional Legal Expenses
Amount:	$36.50

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

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 69.54 as outlined on page 1 of invoice.
Amount:	$69.54
Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$70.00
Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$140.00
Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$597.70
Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$33.70

Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$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.
Amount:	$337.89
Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$70.00
Component Description:	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.
Amount:	$187.26

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, 2594.40/11 for 235.86 as outlined on page 1 of invoice.
Amount:	$235.86
Component Description:	Outside Professional Services Additional Legal Expense
Amount:	$346.50
Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$70.00
Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	$742.80

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.
Amount:	$315.64

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.
Amount:	$87.23

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.
Amount:	$147.01

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.
Amount:	$28.63
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 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.
Amount:	$15.32

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.
Amount:	$29.37

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.
Amount:	$33.45

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.
Amount:	$15.91

	Component Description: Outside Professional Services Additional Legal Expenses **Amount:** $67.40 **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. **Amount:** $6.12 **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 **Amount:** $22.28
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 FCC Form 2100 (main), Construction Permit Application	Information not provided.
Prepare request for Special Temporary Authorization	Information not provided.
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:** Outside Prof Services Engineering Svcs Aux CP **Amount:** $650.00
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	**Component Description:** Outside Professional Services Engineering Section FCC Form 2100 Construction Permit Application - Primary (Main) **Amount:** $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
Address transition timing and coordination issues w/ other stations and wireless	Information not provided.	
Prepare and or review reimbursement form	**Component Description:** **Amount:**	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:** **Amount:**	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract/Invoice Summary. $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
Amount:	$4,356.00
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.
Amount:	$5,651.64

Component Description:	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract/Invoice Summary.
Amount:	$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
Amount:	$4,356.00
Component Description:	Outside Prof Services Project Management Contract/Invoice summary for 11 sites see attach pgs 5-15
Amount:	$2,700.00
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.
Amount:	$10,876.16

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:	$2,499.60
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 Professional Services Project Management of Transition See attachment pg 3-5 for Contract/Invoice Summary. PO /Contract for all eleven transmitter sites.
Amount:	$5,438.08
Component Description:	Outside Professional Services Project Management
Amount:	$9,022.50

Component Description:	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract/Invoice Summary.
Amount:	$54,415.80
Component Description:	Outside Professional Services Project Management See attachment pg. 3 & 4 for Project Summary
Amount:	$6,703.50
Component Description:	Outside Professional Services Project Management See attachment pg. 3 & 4 for Project Summary
Amount:	$9,022.50
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

Attorney Fees - Prepare and File request for Special Temporary Authorization	**Component Description:** **Amount:**	Outside Professional Services STA 9/27 /19 .2 x 365 equal $73.00 $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.	

Cost Information

Other Expenses

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Other Expenses	**$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	$3,082,086.75	N/A	$2,382,054.83	N/A

Components

Actual Information Description	File Name

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

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.
	Amount:	$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.
	Amount:	$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.
	Amount:	$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:** **Component Description:** **Amount:**	50% Main Transmitter Removal. Purchase Order is for all 11 sites. $22,484.25 50 % Aux Transmitter Removal. Purchase Order is for all 11 sites. $13,782.60
DTV Medical Facility Notification	**Component Description:** **Amount:**	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	$3,082,086.75	$2,382,054.83

Reimbursement Status

Question	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
Submission of Estimated Expenses Statements	WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT.	
	1. The Authorized Person signing below certifies that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. 2. The above-named entity acknowledges that all certifications and attached documentation are considered material representations. 3. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.	

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

	8. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a pre-requisite for obtaining the payments herein requested.	
	I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.	**Donald Smith** *Director of New Technologies Compliance & Planning* 07/20/2020

Attachments