



(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility **69360** | Service: **DTV** | Call **WUNL-TV** | Channel: **33 (UHF)** |
ID: | Sign:
File **0000028060**
Number:
FRN: **0001910066** | Date **05/01**
Submitted: **/2019**

Applicant Information

Applicant Name, Type, and Contact Information

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

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	Donald Smith	+1 (919)	dsmith@unctv.
<i>Director of New Technologies</i>	10 UNC-TV Drive	549-7025	org
<i>Compliance & Planning</i>	Research Triangle		
<i>University of North Carolina</i>	Park, NC 27709		
<i>Center for Public Television</i>	United States		

**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****Add Transmitter Information**

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 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?	No
	Manufacturer	
	Model	ULXTE-20
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	11.75 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
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Electrical Service	Service Entrance (3 phases 800A 208V)	No
	Switchgear (industrial 800 amp)	No
	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
	Type	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leasehold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Auxiliary	Other Transmitter Cost Not Listed
Transmitter	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	DCX-2
	Year	1994
	Type	Inductive Output Tube
	IOT Power Type	Two
	Power Capacity	40 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-80
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	46.6 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)	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
	Type	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leasehold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

**Primary
Transmitter**

Other Transmitter Cost Not Listed

Information not provided.

Antennas

Section	Question	Response
Antenna Related Expenses	Do you have antenna related expenses?	Yes

Auxiliary Antenna

Add Antenna Information

Section	Question	Response
Existing Antenna Description	Type of change	Purchase New
	Antenna Use	Auxiliary (Backup)
	Description of Use	Aux
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this antenna currently shared with any other stations?	No
	Is this antenna directional?	Yes
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	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)	202.0 kW

Manufacturer	
Model	TLP-16M
Year	2001

Auxiliary Antenna

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Auxiliary (Backup)
	Description of Use	Interim Facility and Eventual Auxiliary
	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
	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)	500.0 kW

Manufacturer	
Model	SAA12- ATW_WC- G400-ES5R- 33
Year	2019
Justification for New Antenna	The antenna can only operate on channel 32. The replacement antenna will be initially used as part of the interim facility during the transition. Following the transition it will become a permanent auxiliary 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?	Yes
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	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)	575.0 kW

Manufacturer	
Model	ATW16HS4- ETC170- 32S
Year	2009

Primary
Antenna

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Primary (Main)
	Description of Use	N/A
	Change Type	Purchase New
	Is this a request for upgraded equipment?	Yes
	Ownership	Owned
	Owner	N/A
	Is antenna shared?	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	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)	1000.0 kW
	Manufacturer	

Model	SAA28- ATW_WC- E400-ET6R- 33
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 32. 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	6 1/8 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?	Yes

Auxiliary **Add Transmission Line**
Transmission Line

Section	Question	Response
Existing Transmission Line Description	Type of change	Purchase New
	Use	Auxiliary (Backup)
	Description of Use	Interim and Eventual Auxiliary
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmission currently shared with any other stations?	No
	Is Transmission Line in operating condition?	Yes
Existing Transmission Line Manufacturer and Type	Manufacturer	
	Type	Rigid
	Diameter	6 1/8 inches
	Other Diameter	N/A
	Segment Length	20 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	340 feet per run

**Auxiliary
Transmission Line**

New Transmission Line

Section	Question	Response
New Transmission Line Costs	Use	Auxiliary (Backup)
	Description of Use	Interim and Eventual Auxiliary
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Type	Rigid
	Diameter	6 1/8 inches
	Other Diameter	N/A
	Segment Length	19 1/2 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	380 feet per run
	Justification for New Transmission Line	The existing transmission line has a stick length of 20 feet, a length that is inconsistent with operations on channel 33. The only option is to replace the transmission line.

Auxiliary	Other Transmission Line Expenses Not Listed
Transmission Line	Information not provided.

Primary
Transmission Line

Existing Transmission Line

Section	Question	Response
Existing Transmission Line Description	Type of change	Purchase New
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing transmission line shared with another station or stations?	No
	Is Transmission Line in operating condition?	Yes
Existing Transmission Line Manufacturer and Type	Manufacturer	
	Type	Waveguide
	Diameter	N/A
	Other Diameter	N/A
	Segment Length	N/A
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	355 feet per run

**Primary
Transmission Line**

New Transmission Line

Section	Question	Response
New Transmission Line Costs	Use	Primary (Main)
	Description of Use	N/A
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Type	Rigid
	Diameter	6 1/8 inches
	Other Diameter	N/A
	Segment Length	19 1/2 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	400 feet per run
	Justification for New Transmission Line	The waveguide manufacturer has indicated that the best option to move to channel 33 is to acquire new transmission line. The existing line hasn't been made since 2004, and replacement (instead of re-tuning) is recommended. See narrative for details.

Primary Transmission Line	Other Transmission Line Expenses Not Listed
Information not provided.	

**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?	Terrain Constrained
	Is this tower currently shared with any other stations?	No
	One or more FM, AM or TV radio broadcaster(s)	N/A
	Others Types of Users	N/A
	Is tower documented for structural analysis?	No
	Is tower compliant with Rev G?	Unknown
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1014577
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	36° 22' 31.7" N-
	Longitude (NAD83)	080° 22' 17.5" W-
	Overall Structure Height	351.05 feet
	Support Structure Height	301.83 feet

	Ground Elevation Above Mean Sea Level (AMSL)	2358.90 feet
	Structure Type	TOWER - Free Standing or Guyed Structure
	Tower Owner	UNIVERSITY OF NORTH CAROLINA
	Date Constructed	08/12/2009

Primary Tower

Tower Rigging Costs

Section	Question	Response
Tower Rigging Costs	Complex Tower	Terrain constrained
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
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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?	No
	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 Information not provided.
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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-80	\$1,554,350.00	\$924,731.49		\$423,315.75	
Other Electrical Service: Electrical feed disconnects and other items necessary to meet electrical code requirements	<i>\$15,000.00</i>	\$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	\$2,912.41	N/A
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	N/A	N/A	N/A

UHF - Liquid Cooled Solid State Transmitter 35 - 50 kW	\$1,473,000.00	\$846,631.49	The estimated cost is for the approved GatesAir ULXTE-60 transmitter. The transmitter purchase has been upgraded to a ULXTE- 80. It is understood that the station is responsible for the upgrade portion of the purchase price.	\$420,403.34	Test
Auxiliary Transmitter ULXTE-20	\$547,550.00	\$333,124.77		\$140,712.39	
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 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
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	\$494,500.00	\$281,424.77	See attached Transmitter Pricing Narrative	\$138,753.79	N/A
Sub-total	\$2,101,900.00	\$1,257,856.26	N/A	\$564,028.14	N/A
Total for all systems	\$3,326,381.50	\$2,267,342.34	N/A	\$1,037,246.61	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	<p>Component Description: 50% Transformer on line 18 (Quote 75579), line 16 (Quote 75582). Purchase Order is for all 11 sites.</p> <p>Amount: \$2,912.41</p>
Switchgear - industrial 800 amp	Information not provided.

UHF - Liquid Cooled Solid State Transmitter 35 - 50 kW	<p>Component Description: 50% Main Transmitter & Installation, Installation included w /Transmitter on Form 399, Transformer separate line on Form 399. Purchase Order is for all 11 sites.</p> <p>Amount: \$420,403.34</p>
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	<p>Component Description: 50% Transformer on line 17 of quote, separate line item on Form 399. Purchase order is for all 11 sites.</p> <p>Amount: \$1,958.60</p>

UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	Component Description: Amount:	50% Aux Transmitter & Installation, Installation included w /Transmitter on Form 399. Transformer separate line item on Form 399. Purchase Order for all 11 sites. \$138,753.79
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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 SAA28-ATW_WC-E400-ET6R-33	\$308,530.00	\$184,100.50		\$83,000.24	
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 Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	\$289,500.00	\$166,000.50	See attached RFS Antenna Change Narrative with Pricing Information	\$83,000.24	N/A
Auxiliary Antenna SAA12-ATW_WC-G400-ES5R-33	\$158,792.50	\$156,752.50		\$55,676.25	

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
UHF - High Power, Side Mount, basic slot antenna, 500 kW input, directional,, elliptically or circularly polarized	\$111,352.50	\$111,352.50	See RFS Antenna Change Narrative with Pricing Information	\$55,676.25	N/A
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	N/A
Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed)	\$12,300.00	\$12,000.00	N/A	N/A	N/A
Sub-total	\$467,322.50	\$340,853.00	N/A	\$138,676.49	N/A

Total for all systems	\$3,326,381.50	\$2,267,342.34	N/A	\$1,037,246.61	N/A
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Components

Actual Information	
Description	File Name
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 Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	<p>Component Description:</p> <p>50% Primary Antenna (See Bid Page 57 Attachment A Pricing Form, Item # 52/53) included in Inv & PO Line 16. Invoice & Purchase Order are for 10 sites. 50% Portion paid by WUNL is displayed on Inv & PO Line 17. See revised attachment.</p> <p>Amount: \$83,000.24</p>
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.

UHF - High Power, Side Mount, basic slot antenna, 500 kW input, directional,, elliptically or circularly polarized	<p>Component Description:</p> <p>50% Auxilliary Antenna (See Bid Page 57 Attachment A Pricing Form Item 49) included in Inv & PO Line 16. Invoice & Purchase Order are for 10 sites. See revised attachment.</p> <p>Amount:</p> <p>\$55,676.25</p>
Sweep test of existing antenna	Information not provided.
Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed)	Information not provided.

Cost
Information

Transmission Line

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Transmission Line	\$80,800.00	\$62,143.21		\$31,071.61	
Rigid Transmission Line - copper, 6 1/8"	\$80,800.00	\$62,143.21	See RFS Antenna Change Narrative with Pricing Information	\$31,071.61	N/A
Auxiliary Transmission Line	\$76,760.00	\$58,227.81		\$29,113.91	
Rigid Transmission Line - copper, 6 1/8"	\$76,760.00	\$58,227.81	See RFS Antenna Change Narrative with Pricing Information	\$29,113.91	N/A
Sub-total	\$157,560.00	\$120,371.02	N/A	\$60,185.52	N/A
Total for all systems	\$3,326,381.50	\$2,267,342.34	N/A	\$1,037,246.61	N/A

Components

Actual Information Description	File Name
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Rigid Transmission Line - copper, 6 1/8"	<div> Component Description: 50% Primary Transmission Line See Bid Page 57 Attachment A Pricing Form Item 54) included in Inv & PO Line 16. Invoice & Purchase Order are for 10 sites. See revised attachment. </div> <div> Amount: \$31,071.61 </div>
Rigid Transmission Line - copper, 6 1/8"	<div> Component Description: 50% Auxilliary Transmission Line (See Bid Page 57 Attachment A Pricing Form Item 50) included in Inv & PO Line 16. Invoice & Purchase Order are for 10 sites. See revised attachment. </div> <div> Amount: \$29,113.91 </div>

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	\$421,000.00	\$272,812.06		\$136,406.03	
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	\$421,000.00	\$272,812.06	See RFS Antenna Change Narrative with Pricing Information	\$136,406.03	N/A
Sub-total	\$421,000.00	\$272,812.06	N/A	\$136,406.03	N/A
Total for all systems	\$3,326,381.50	\$2,267,342.34	N/A	\$1,037,246.61	N/A

Components

Actual Information	
Description	File Name

Complex Tower (includes, for example, those with candelabras and/or stacked antennas)

Component Description:

50% Primary /Complex Tower Installation (See Bid Page 57 Attachment A Pricing Form Item 51) for Auxilliary Antenna included in Inv & PO Line 18. Invoice & Purchase Order are for 10 sites. See revised attachment.

Amount:

\$39,441.20

Component Description:

50% Primary /Complex Tower Installation (See Bid Page 57 Attachment A Pricing Form Item 55) for Primary Antenna included in Inv & PO Line 18. Invoice & Purchase Order are for 10 sites. See revised attachment.

Amount:

\$96,964.83

Cost
Information

Outside Professional Services

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Outside Professional Services	\$93,275.00	\$195,676.00		\$104,289.08	
Additional Legal Expenses	<i>\$24,500.00</i>	\$24,500.00	Estimate for legal expenses for non-catalog advice and review including transition status reports and other miscellaneous legal needs.	\$3,553.04	N/A
Tower Structural Analysis	<i>\$7,000.00</i>	\$7,000.00	N/A	\$5,000.00	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 request for Special Temporary Authorization	\$3,680.00	\$3,500.00	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 - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	\$4,210.00	\$4,000.00	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
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

Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	\$5,260.00	\$5,000.00	N/A	\$653.40	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	N/A	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	\$675.00	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	N/A	N/A

Project management of the transition	\$18,960.00	\$128,926.00	See attachment "WUNL Program Designer - Manager Narrative" for details on estimated cost	\$92,595.14	N/A
Sub-total	\$93,275.00	\$195,676.00	N/A	\$104,289.08	N/A
Total for all systems	\$3,326,381.50	\$2,267,342.34	N/A	\$1,037,246.61	N/A

Components

Actual Information	
Description	File Name
Additional Legal Expenses	<div> <div> Component Description: </div> <div> Outside Professional Services Additional Legal Expenses </div> </div> <div> Amount: </div> <div> \$574.30 </div>
	<div> <div> Component Description: </div> <div> 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. </div> </div> <div> Amount: </div> <div> \$28.64 </div>

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 equal 147.01 as outlined on page 1 of invoice
Amount:	\$147.01

Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	\$67.40

Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	\$70.00

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.
Amount:	\$235.85

Component Description:	Outside Professional Services Additional Legal Expenses Legal services benefit entire FCC Repack project across 10 of 11 Call Signs/Facility IDs, 3378.88/10 equal 337.89 as outlined on page 1 of invoice
Amount:	\$337.89

Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	\$73.00

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, 2059.90/11 equal 187.27 as outlined on page 1 of invoice
Amount:	\$187.27

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
Amount:	\$476.40

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 315.63 as outlined on page 1 of invoice.
Amount:	\$315.63

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 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 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:	\$22.27

Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	\$70.00

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, 323.00/11 equal 29.36 as outlined on page 1 of invoice.
Amount:	\$29.36

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 33.46 as outlined on page 1 of invoice.
Amount:	\$33.46

Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	\$67.40

Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	\$70.00

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
Amount:	\$33.70

Component Description:	Outside Professional Services Additional Legal Expenses
Amount:	\$35.00

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, 168.50/11 equal 15.32 as outlined on page 1 of invoice.
Amount:	\$15.32

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:	\$6.37

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.

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,
67.40/11 equal
6.13 as outlined
on page 1 of
invoice.

Amount:

\$6.13

Tower Structural Analysis	Component Description:		Outside Professional Services Structural Analysis See attachment pg. 7 for schedule of services.
	Amount:		\$2,500.00
	Component Description:		Outside Professional Services Tower Structural Analysis See attachment page 7 for schedule of services.
	Amount:		\$2,500.00
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	Information not provided.		
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.		
Prepare request for Special Temporary Authorization	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, License to Cover Application	Information not provided.
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	<div> <div>Component Description:</div> <div>Outside Professional Services Attorney Fees Construction Permit Application Main/Primary</div> </div> <div> <div>Amount:</div> <div>\$653.40</div> </div>
RF Consulting Engineer Fees- Aux Antenna: Prepare engineering section of FCC Form 2100, Construction Permit Application	Information not provided.
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	<div> <div>Component Description:</div> <div>Outside Professional Services Engineering Section FCC Form 2100 Construction Permit Application Main/Primary</div> </div> <div> <div>Amount:</div> <div>\$1,812.50</div> </div>

Perform engineering study for new channel assignment and antenna development	<p>Component Description:</p> <p>Outside Professional Services Engineering Study New Channel Assignment Antenna Development</p> <p>Amount:</p> <p>\$675.00</p>
Address transition timing and coordination issues w/ other stations and wireless	Information not provided.
Prepare and or review reimbursement form	Information not provided.
Project management of the transition	<p>Component Description:</p> <p>Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract /Invoice Summary.</p> <p>Amount:</p> <p>\$4,985.74</p> <p>Component Description:</p> <p>Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract /Invoice Summary.</p> <p>Amount:</p> <p>\$13,735.60</p>

Component Description:	Outside Professional Services Project Management of Transition See attachment pg 3-5 for Contract /Invoice Summary.
Amount:	\$58,147.80

Component Description:	Outside Professional Services Project Management See attachment pg. 3 & 4 for Project Summary
Amount:	\$9,022.50

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:	\$6,703.50

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	\$85,324.00	\$79,774.00		\$33,661.35	
MVPD Notification of Channel Change	<i>\$5,500.00</i>	\$5,500.00	Preliminary estimate for service	N/A	N/A
Develop and air announcement of upcoming channel change	<i>\$2,000.00</i>	\$2,000.00	Preliminary estimate	N/A	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	<i>\$66,274.00</i>	\$66,274.00	See attached Main & Aux Transmitter Disposal Quotes	\$33,661.35	N/A
DTV Medical Facility Notification	\$11,550.00	\$6,000.00	Preliminary estimate for services	N/A	N/A
Sub-total	\$85,324.00	\$79,774.00	N/A	\$33,661.35	N/A
Total for all systems	\$3,326,381.50	\$2,267,342.34	N/A	\$1,037,246.61	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.
Disposal Costs (for equipment and other waste, net of any salvage value)	<div> <div> Component Description: </div> <div> 50% Main Transmitter Disposal Costs. Purchase Order is for all 11 sites. </div> </div> <div> <div> Amount: </div> <div> \$19,878.75 </div> </div> <div> <div> Component Description: </div> <div> 50% Aux Transmitter Disposal Costs. Purchase Order is for all 11 sites. </div> </div> <div> <div> Amount: </div> <div> \$13,782.60 </div> </div>
DTV Medical Facility Notification	Information not provided.

**Cost
Information**

Grand Total

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	\$3,326,381.50	\$2,267,342.34	\$1,037,246.61

Reimbursement Status

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

Certification	Section	Question	Response
	Submission of Estimated Expenses Statements	<p>WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT.</p>	
		<ol style="list-style-type: none"> 1. The Authorized Person signing below certifies that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. 2. The above-named entity acknowledges that all certifications and attached documentation are considered material representations. 3. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount. 	

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

<p>8. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a pre-requisite for obtaining the payments herein requested.</p>	
<p>I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.</p>	<p>Donald Smith <i>Director of New Technologies Compliance & Planning</i></p> <p>05/01/2019</p>

Certification	Section	Question	Response
	Submission of Actual Cost Documentation Statements	<p>WILLFUL FALSE, FRAUDULENT, OR FICTITIOUS STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE AND/OR FRAUDULENT STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT (U.S. CODE, TITLE 31, SECTIONS 3729-3733).</p>	
		<ol style="list-style-type: none"> 1. The Authorized Person signing below certifies and represents that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity. 2. The above-named entity certifies that the statements in this form and attached documentation are true, complete, and correct. 3. The above-named entity acknowledges that all certifications and attached documentation are considered material representations. 	

4. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.
5. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster Relocation Fund are necessary to change channels (full power and Class A stations) and/or otherwise modify a television station's facility as a result of the spectrum repack (LPTV/TV Translator stations); or to minimize service disruption resulting from a repacked television station (FM stations); or to continue to carry the signal of a broadcaster that changes channels (MVPD) .
6. The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
7. The above-named entity certifies that the cost information /documents submitted reflect costs actually incurred.

<p>8. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.</p> <p>9. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a prerequisite for obtaining the payments herein requested.</p>	
<p>I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.</p>	<p>Robert Levin <i>Director of Finance and Administration</i></p> <p>05/01/2019</p>

Attachments