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: **8688** | Service: **DTV** | Call Sign: **WRAL-TV** | Channel: **17 (UHF)**

File Number: **0000027637**

FRN: **0001961713** | Date Submitted: **12/04/2019**

Applicant Information

Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
Capitol Broadcasting Company, Inc.	Chrissy Cicuto 2619 Western Blvd Raleigh, NC 27606 United States	+1 (919) 821-8730	ccicuto@cbc-raleigh.com	Corporation

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
Peter Sockett *Director of Engineering and Operations* *Capitol Broadcasting Company*	Pete Sockett 2619 Western Blvd Raleigh, NC 27606 United States	+1 (919) 821-8573	psockett@wral.com

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.	Yes
Briefly describe transition plan	All 4 broadcasters will need to replace antennas on the candelabra. The transition plan for WRAL / WRAZ is to replace the existing Aux antenna with a single ch15 / 17 slot antenna at approx 1720ft (524m) to use as both the new AUX and interim facility.

Transmitters

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

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	CD2400P4
	Year	1999
	Type	Inductive Output Tube
	IOT Power Type	Other
	Other IOT Power Type	4 tube system
	Power Capacity	100 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	ULXTED-120
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	76.0 kW
	Justification for New Transmitter	1) Manufacturer (Gates Air) will not support channel changes to this model of transmitter. 2) Comark estimate for IOT transmitter is higher than a solid State transmitter from GatesAir

Primary Transmitter

Other Transmitter Costs

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

	Power	300 kVA
	Rigid Conduit and Wiring	Yes
	Size	4 inches
	Length	400.0 feet
	Other Electrical Service	No
	Description	N/A
HVAC Service	Does the replacement transmitter require HVAC Service?	Yes
	Type	Cooling Only
	Size	15 tons
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	Yes
	Size	1600.0 square feet
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

Name	Description
System installation	Manufacturer to come to site to install and commission.
Spare Modules and Power supplies	Currently we keep 1 spare IOT tube on hand in the event of a failure. This purchases spare parts for Solid State TX
RF System	Magic T / Mask filter / Dummy load and RF Line for Installation

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	Auxilary (Backup)
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing antenna shared with another station or stations?	Yes
	Is the existing antenna directional?	Yes
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	Yes
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	Side Mount
	Antenna position in stack	Not in Stack
	Polarization	Horizontal
	Type	Broadband Panel
	Number of Stations Supported	2
	Number of Panels	36
	Design power capacity in use	100.0 %
	Lower Limit	674.00 MHz
	Upper Limit	710.00 MHz
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	1000.0 kW

Manufacturer	
Model	ETU-P3H12-(48-53)
Year	2008

Facility ID's and Call Signs of all stations with whom the antenna is shared.

Facility ID	Call Sign
64611	WRAZ

Auxiliary Antenna

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Auxiliary (Backup)
	Description of Use	Interim Facility and Auxiliary (Backup)
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Ownership	Owned
	Owner	N/A
	Is antenna shared?	Yes
	Is antenna directional?	No
	Will antenna be located on or in close proximity to an antenna farm?	Yes
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)	805.0 kW

Manufacturer	
Model	ATW25H3-ESO-15 /17H
Year	2018
Justification for New Antenna	This antenna will serve as both an Interim facility while the candelabra is rebuilt and will replace the existing AUX antenna already in service for both WRAL and WRAZ

Auxiliary Antenna

Other Antenna Costs

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	Yes
	Type	New
	Number of channels supported	2
	Frequencies of channels supported	Upper and lower frequency
	Frequency	476.0 MHz - 494.0 MHz
	Do you need a combiner output splitter /switcher for dual feed lines?	No
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes

	Broadband or Single Channel?	Broadband
	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?	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?	Yes
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Top
	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)	1000.0 kW

Manufacturer	
Model	ATW25H5-ETO-48H
Year	2008

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?	Yes
New Antenna Manufacturer and Types	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Top
	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)	533.0 kW
	Manufacturer	

	Model	ATW25H4-ETO-17M
	Year	2018
	Justification for New Antenna	Required as old antenna is cut for channel 48

Primary Antenna

Other Antenna Costs

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	
	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	7 3/16 inches inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No
Sweep Test	Do you require the sweep testing of 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 Transmission Line

Existing Transmission Line

Section	Question	Response
Existing Transmission Line Description	Type of change	Purchase New
	Use	Auxiliary (Backup)
	Description of Use	Auxiliary (Backup)
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing transmission line shared with another station or stations?	Yes
	Is Transmission Line in operating condition?	Yes
Existing Transmission Line Manufacturer and Type	Manufacturer	
	Type	Rigid
	Diameter	7 3/16 inches
	Other Diameter	N/A
	Segment Length	20 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	1738 feet per run

Facility ID's and Call Signs of all stations with whom the transmission line is shared.

Facility ID	Call Sign
64611	WRAZ

Auxiliary Transmission Line

New Transmission Line

Section	Question	Response
New Transmission Line Costs	Use	Auxiliary (Backup)
	Description of Use	Auxiliary (Backup) and Interim Facility
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Type	Rigid
	Diameter	8 3/16 inches
	Other Diameter	N/A
	Segment Length	Broadband
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	2013 feet per run
	Justification for New Transmission Line	Required to feed new Aux / Interim antenna. Cost will be split with WRAZ.

Auxiliary Transmission Line

Other Transmission Line Expenses Not Listed

No 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	2210 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	7 3/16 inches
	Other Diameter	N/A
	Segment Length	19 1/2 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	2210 feet per run
	Justification for New Transmission Line	Existing run is GLW 1500 Waveguide that is frequency specific for High Band UHF

Primary Transmission Line

Other Transmission Line Expenses Not Listed

Name	Description
Gas Barrier	The transmission line Gas Barrier enables the transmission line to be pressurized.

2 Wall feed through units	The two listed wall feed thru units are for the transmission line as it goes through the wall to the outside of the transmitter building.

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	Modify Existing
	Tower Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Is this tower consider Complex?	Candelabra
	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	1027322
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	35° 40' 29.0" N-
	Longitude (NAD83)	078° 31' 39.0" W-
	Overall Structure Height	1988.82 feet
	Support Structure Height	1988.82 feet
	Ground Elevation Above Mean Sea Level (AMSL)	359.90 feet

Structure Type	TOWER - Free Standing or Guyed Structure
Tower Owner	CBC REAL ESTATE COMPANY, INC.
Date Constructed	03/23/2000

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
73936	WTKK	FM
73205	WLFL	DTV
50782	WNCN	DTV
64611	WRAZ	DTV

Primary Tower

Tower Modification Costs

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

Primary Tower

Tower Rigging Costs

Section	Question	Response
Tower Rigging Costs	Complex Tower	Candelabra

Helicopter Services Required	Are helicopter services required?	Yes

Primary Tower

Other Tower Expenses Not Listed

Name	Description
Relocate ENG Dish	Relocate 2 ENG receive dishes to create room for Interim / Aux antennas - Split with WRAZ

Outside Professional Services Costs

Section	Question	Response
Outside Project Management Services	Do you require outside project management services?	Yes
	Number of Hours	220
	Explanation	WRAL /WRAZ has only one engineer currently available at the TX site. Additional project management is necessary. The estimate is an average of 20 hrs per month for Jan - November of 2019. Note: post Phase 5 the candelabra still needs to be rebuilt.
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	No

	Quantity	N/A
	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	No
	Quantity	N/A
	NEPA Section 106 environmental review	No
	Environmental Assessment	No
	ASR Modification	No
	FAA Consultation (including preparation of FAA Form 7460)	No
	Negotiation of Lease and other Matter for Shared Locations	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	Yes
	RF exposure measurements	Yes
	Additional Field Engineering Service	Yes

Number of Days	3
Justification	Independent verification and inspection of installed systems

Outside Professional Services Costs

Other Professional Services Expenses Not Listed

Information not provided.

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	Yes
	BLM or NFS Coordination	No
	FCC Construction Permit Minor Change	No
	FCC License to Cover Application	Yes
	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
Facilty remote control and monitoing modifications	Modifications to existing system to add new telemetry and control.

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 ULXTED-120	**$3,235,641.00**	**$3,102,644.00**		**$2,855,853.75**	
RF System	***$1.00***	$1.00	Included in overall TX price	N/A	N/A
Spare Modules and Power supplies	***$35,000.00***	$35,000.00	N/A	N/A	N/A
System installation	***$1.00***	$1.00	Included in overall TX price	N/A	N/A
Other -- Building Addition Size: 1600.0	***$867,639.00***	$867,639.00	Our facility is full with no room to install new equipment before old equipment is removed. This facility will be shared with WRAZ. This is 1/2 the cost, other half will be represented on WRAZ. Please see "building cost narrative" recently uploaded.	$749,982.07	New estimate was uploaded April 18th for approval.

15 Ton system	$55,800.00	$1.00	Included in overall building estimate	N/A	N/A
4" Rigid Conduit and Wiring (Cost per foot)	$40,400.00	$1.00	Included in overall building estimate	N/A	N/A
Transformer 3 phase /480v - 300 KVA	$36,800.00	$1.00	Included in overall TX price	N/A	N/A
UHF - Liquid Cooled Solid State Transmitter 76.0 kW	***$2,200,000.00***	$2,200,000.00	Includes all TX cost - RF System, installation and electrical (transformer)	$2,105,871.68	N/A
Sub-total	$3,235,641.00	$3,102,644.00	N/A	$2,855,853.75	N/A
Total for all systems	$6,459,913.65	$5,751,364.65	N/A	$4,416,068.45	N/A

Components

Actual Information Description	File Name
RF System	Information not provided.
Spare Modules and Power supplies	Information not provided.
System installation	Information not provided.
Other -- Building Addition Size: 1600.0	**Component Description:** WRAL portion of ITS invoice WRAL-WRAZ-008 **Amount:** $48,892.50

Component Description:	WRAL Portion of Osborn Invoice 29157
Amount:	$933.70
Component Description:	WRAL portion of ITS Invoice WRAL-WRAZ-007
Amount:	$48,375.00
Component Description:	WRAL portion of ITS Invoice WRAL-WRAZ-006
Amount:	$38,250.00
Component Description:	WRAL Portion of Osborn Invoice 27973
Amount:	$5,111.98
Component Description:	WRAL Portion of Osborn Invoice 28690
Amount:	$20,320.01
Component Description:	WRAL Portion of Osborn Invoice 28274
Amount:	$14,745.14
Component Description:	WRAL portion of Osborn invoice 27628
Amount:	$1,267.64

	Component Description: WRAL Portion of Osborn Invoice 27327 **Amount:** $7,741.53 **Component Description:** WRAL Portion of Osborn Invoice 27175 **Amount:** $7,563.72 **Component Description:** Fourth invoice (Pay app) in construction project **Amount:** $70,326.24 **Component Description:** First invoice (Pay app) in construction project **Amount:** $254,945.60 **Component Description:** Fifth invoice (Pay app) in construction project **Amount:** $50,216.16 **Component Description:** Second invoice (Pay app) in construction project **Amount:** $70,087.95 **Component Description:** Third invoice (Pay app) in construction project **Amount:** $111,204.90
15 Ton system	Information not provided.
4" Rigid Conduit and Wiring (Cost per foot)	Information not provided.

Transformer 3 phase/480v - 300 KVA	Information not provided.	
UHF - Liquid Cooled Solid State Transmitter 76.0 kW	**Component Description:** **Amount:**	50% down for transmitter $1,053,306.70
	Component Description: **Amount:**	Gates second invoice - includes RF system and electrical (transformer) $1,052,564.98

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 ATW25H4-ETO-17M	**$310,130.00**	**$294,600.00**		**$236,125.00**	
Elbow complex, single channel, at antenna input, per 7 3/16. feedline (if needed)	$13,900.00	$13,200.00	N/A	$0.00	N/A
Sweep test of existing antenna	$6,730.00	$6,400.00	N/A	$6,250.00	N/A
UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	$289,500.00	$275,000.00	N/A	$229,875.00	N/A
Auxiliary Antenna ATW25H3-ESO-15/17H	**$275,790.00**	**$267,000.00**		**$147,281.17**	

Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	$5,260.00	$2,500.00	1/2 split with WRAZ	N/A	N/A
Sweep test of existing antenna	$6,730.00	$3,200.00	1/2 split with WRAZ	N/A	N/A
UHF - High Power, Side Mount, basic slot antenna, 805 kW input, elliptically or circularly polarized	***$137,500.00***	$137,500.00	This antenna is a "combined antenna" the other 1/2 of the cost is shared with WRAZ	$105,134.38	This covers cost for both WRAL and WRAZ AUX combined antenna ststem
New combiner, cost per channel (without antenna)	$84,200.00	$95,000.00	Interim (AUX) antenna will support full power from each station (WRAL and WRAZ) requiring larger sized combiner.	$18,062.50	This is for Both WRAL and WRAZ interim / aux antenna system

Elbow complex, broadband, at antenna input, per 8 3/16. feedline (if needed)	$18,950.00	$17,800.00	This antenna is a "combined antenna" the other 1 /2 of the cost is shared with WRAZ	$17,773.04	N/A
Side mount brackets for high power antennas (if not included in antenna base cost)	$23,150.00	$11,000.00	1/2 split with WRAZ	$6,311.25	This Covers both WRAL and WRAZ combined AUX system
Sub-total	$585,920.00	$561,600.00	N/A	$383,406.17	N/A
Total for all systems	$6,459,913.65	$5,751,364.65	N/A	$4,416,068.45	N/A

Components

Actual Information Description	File Name
Elbow complex, single channel, at antenna input, per 7 3/16. feedline (if needed)	Information not provided.
Sweep test of existing antenna	**Component Description:** Final payment (15%) for System Sweep **Amount:** $937.50 **Component Description:** 85% initial payment - System Sweep **Amount:** $5,312.50

UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	**Component Description:** **Amount:** **Component Description:** **Amount:**	85% initial Payment WRAL Main Antenna $195,393.75 Final payment (15%) for Primary Antenna - ATW25H4-ETO-17H $34,481.25
Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	Information not provided.	
Sweep test of existing antenna	Information not provided.	
UHF - High Power, Side Mount, basic slot antenna, 805 kW input, elliptically or circularly polarized	**Component Description:** **Amount:**	1/2 of 85% Initial Payment - Combined WRAL /WRAZ Side mount AUX Antenna $105,134.38
New combiner, cost per channel (without antenna)	**Component Description:** **Amount:**	1/2 of 85% Initial Payment - Combiner for WRAL and WRAZ $18,062.50
Elbow complex, broadband, at antenna input, per 8 3/16. feedline (if needed)	**Component Description:** **Amount:**	50% split between WRAL and WRAZ for ERI Invoice 53331 $17,773.04

Side mount brackets for high power antennas (if not included in antenna base cost)	**Component Description:** **Amount:**	1/2 of 85% Initial Payment - Leg mount bracket set WRAL and WRAZ Combined AUX $6,311.25

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 Justificatio
Primary Transmission Line	**$641,995.65**	**$610,095.65**		**$581,709.49**	
2 Wall feed through units	***$703.80***	$703.80	No Predetermined Cost Estimate	$703.80	N/A
Gas Barrier	***$391.85***	$391.85	No Predetermined cost estimate	$391.85	N/A
Rigid Transmission Line - copper, 7 3 /16"	$640,900.00	$609,000.00	N/A	$580,613.84	N/A
Auxiliary Transmission Line	**$803,187.00**	**$381,000.00**		**$210,359.12**	
Rigid Transmission Line - copper, 8 3 /16" broadband	$803,187.00	$381,000.00	This represents 1 /2. WRAZ will cover the other 1/2	$210,359.12	This covers both WRAL main and the WRAL /WRAZ combined AUX antenna systems
Sub-total	$1,445,182.65	$991,095.65	N/A	$792,068.61	N/A
Total for all systems	$6,459,913.65	$5,751,364.65	N/A	$4,416,068.45	N/A

Components

Actual Information Description	File Name

2 Wall feed through units	**Component Description:** **Amount:**	Full payment for Wall Feed Thru $703.80
Gas Barrier	**Component Description:** **Amount:**	Full payment for gas Barrier 7-3/16" 75 Ohm $391.85

Rigid Transmission Line - copper, 7 3/16"	**Component Description:**	85% initial payment - TX Line System design and drawings
	Amount:	$9,243.75
	Component Description:	Final payment (15%) for Sahara Dehydrator
	Amount:	$1,398.68
	Component Description:	Final payment (15%) for Transmission Line system
	Amount:	$84,062.14
	Component Description:	85% initial payment - Sahara TX Line Dehydrator - WRAL Main line
	Amount:	$7,925.82
	Component Description:	85% initial payment - Transmission Line for WRAL
	Amount:	$476,352.20
	Component Description:	Final payment (15%) for TX line system design and drawings
	Amount:	$1,631.25

Rigid Transmission Line - copper, 8 3/16" broadband	**Component Description:**	1/2 of 85% initial payment - TX Line for Combined WRAL WRAZ AUX Antenna system
	Amount:	$206,396.21
	Component Description:	1/2 of 85% initial payment - Sahara TX line dehydrator - AUX combined system WRAL and WRAZ
	Amount:	$3,962.91

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	**$960,050.00**	**$959,050.00**		**$354,375.64**	
Structural engineering tower load study for a documented tower with candelabra	$20,000.00	$19,000.00	N/A	$4,750.00	N/A
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	$421,000.00	$421,000.00	N/A	$349,625.64	N/A
Minor tower reinforcement /modifications	$158,000.00	$158,000.00	N/A	N/A	N/A
Tower Helicopter Lift	***$336,050.00***	$336,050.00	No predetermined cost available.	N/A	N/A
Relocate ENG Dish	***$25,000.00***	$25,000.00	This is 1/2 of the cost - other half will be covered by WRAZ	N/A	N/A
Sub-total	$960,050.00	$959,050.00	N/A	$354,375.64	N/A
Total for all systems	$6,459,913.65	$5,751,364.65	N/A	$4,416,068.45	N/A

Components

Actual Information Description	File Name	
Structural engineering tower load study for a documented tower with candelabra	**Component Description:**	WRAL portion of ERI Invoice 52341. Remainder of invoice charged to WRAZ
	Amount:	$4,750.00
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	**Component Description:**	WRAL 50% of invoice for balance due.
	Amount:	$61,870.00
	Component Description:	WRAL 50% deposit with order for tower installation services
	Amount:	$61,870.00
	Component Description:	WRAL portion of invoice WRAL-5000 for 50% with order. Remainder of Invoice charged to WRAZ
	Amount:	$84,505.32
	Component Description:	WRAL Portion of ERI invoice WRAL-53700. Remainder of invoice charged to WRAZ.
	Amount:	$33,625.00

	Component Description: WRAL portion of ERI Invoice WRAL-53914. Remainder of invoice charged to WRAZ **Amount:** $16,901.07 **Component Description:** Tower Plumb and Tension cost. Total amount of $46,500.00 is split between WRAL and WRAZ **Amount:** $23,250.00 **Component Description:** WRAL Portion of ERI Invoice WRAL-5000A. Remaining invoice amount charged to WRAZ **Amount:** $67,604.25
Minor tower reinforcement /modifications	Information not provided.
Tower Helicopter Lift	Information not provided.
Relocate ENG Dish	Information not provided.

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 Justificatio
Outside Professional Services	**$179,385.00**	**$91,050.00**		**$30,364.28**	
Additional Field Engineering Service, 3 Days	***$6,500.00***	$6,500.00	Estimating $2000 per day for an independent verification of the new transmission systems	$6,500.00	N/A
RF Exposure Measurements	$21,050.00	$2,500.00	N/A	N/A	N/A
Comprehensive coverage verification via field study, if needed	$84,200.00	$20,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application	$2,365.00	$2,250.00	N/A	N/A	N/A
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	$4,210.00	$4,000.00	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
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	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	$3,155.00	$3,000.00	N/A	N/A	N/A

Perform engineering study for new channel assignment and antenna development	$7,360.00	$7,000.00	N/A	N/A	N/A
Project management of the transition	$34,760.00	$30,800.00	Estimate consists of an average of 20hrs per month Jan - Nov 2019	$23,864.28	N/A
Prepare and or review reimbursement form	$2,630.00	$2,500.00	N/A	N/A	N/A
Address transition timing and coordination issues w/ other stations and wireless	$2,630.00	$2,500.00	N/A	N/A	N/A
Sub-total	$179,385.00	$91,050.00	N/A	$30,364.28	N/A
Total for all systems	$6,459,913.65	$5,751,364.65	N/A	$4,416,068.45	N/A

Components

Actual Information Description	File Name

Additional Field Engineering Service, 3 Days	**Component Description:** Final payment (15%) for site survey by 2 ERI Climbers **Amount:** $975.00 **Component Description:** TX Layout Site Survey - 2 Certified ERI Climbers **Amount:** $5,525.00
RF Exposure Measurements	Information not provided.
Comprehensive coverage verification via field study, if needed	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.
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	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	Information not provided.
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	Information not provided.
Perform engineering study for new channel assignment and antenna development	Information not provided.
Project management of the transition	**Component Description:** Project Management Services for February 2019 **Amount:** $1,890.00 **Component Description:** Project Management Services for January 2019 **Amount:** $1,540.00 **Component Description:** Project Management Services for July 2019 **Amount:** $3,424.28 **Component Description:** Project Management Services for May 2019 **Amount:** $4,585.00

	Component Description: Project Management Services for June 2019 **Amount:** $4,480.00 **Component Description:** Project Management Services for March 2019 **Amount:** $980.00 **Component Description:** Project Management Services for September 2019 **Amount:** $1,610.00 **Component Description:** April invoice **Amount:** $5,355.00
Prepare and or review reimbursement form	Information not provided.
Address transition timing and coordination issues w/ other stations and wireless	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 Cos Justificati
Other Expenses	**$53,735.00**	**$45,925.00**		**$0.00**	
DTV Medical Facility Notification	$11,550.00	$3,750.00	N/A	N/A	N/A
FCC Filing Fees - Form 2100 license to cover application	$335.00	$325.00	N/A	N/A	N/A
Non-zoning permits	***$1,000.00***	$1,000.00	N/A	N/A	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	***$10,000.00***	$10,000.00	N/A	N/A	N/A
Equipment Delivery and Handling Charges	***$4,600.00***	$4,600.00	No Predetermined Cost Estimate	N/A	N/A
Develop and air announcement of upcoming channel change	***$10,000.00***	$10,000.00	N/A	N/A	N/A
MVPD Notification of Channel Change	***$1,250.00***	$1,250.00	N/A	N/A	N/A

Facilty remote control and monitoing modifications	***$15,000.00***	$15,000.00	Facility remote control and monitoring modifications	N/A	N/A
Sub-total	$53,735.00	$45,925.00	N/A	$0.00	N/A
Total for all systems	$6,459,913.65	$5,751,364.65	N/A	$4,416,068.45	N/A

Components

Information not provided.

Cost Information

Grand Total

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	$6,459,913.65	$5,751,364.65	$4,416,068.45

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.	**Craig Stephen Turner** *Project Engineer* 12/04/2019

Certification

Section	Question	Response
Submission of Actual Cost Documentation Statements	WILLFUL FALSE, FRAUDULENT, OR FICTITIOUS STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISIONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE AND/OR FRAUDULENT STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT (U.S. CODE, TITLE 31, SECTIONS 3729-3733).	
	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.

	8. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission. 9. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a prerequisite for obtaining the payments herein requested.	
	I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.	**Craig Stephen Turner** *Project Engineer* 12/04/2019

Attachments