



(REFERENCE COPY - Not for submission)

# FCC Form 399: Reimbursement Request

Facility **25932** | Service: **DTV** | Call **WHRO-TV** | Channel: **31 (UHF)** |  
ID:  
File **0000027736**  
Number:  
FRN: **0002062511** | Date **07/10**  
Submitted: **/2017**

## Applicant Information

### Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
<b>HAMPTON ROADS EDUCATIONAL TELECOMMUNICATIONS ASSOC., INC.</b>	Chris G. Gunnufsen 5200 HAMPTON BOULEVARD NORFOLK, VA 23508 United States	+1 (757) 889-9394	chris.gunnufsen@whro.org	Not-for-Profit

## 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
The Preparer is same as the reimbursement contact.			

## Broadcaster Information and Transition Plan

Question	Response
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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	The transition plan is being handled by the Owner of the Tower, American Tower Corporation. The tower is complicated due to the total number of broadcasters collocated on the tower. There will be a Wide Band interim antenna side mounted on the tower 987'

## Transmitters

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

**Primary  
Transmitter**

**Existing Transmitter Information**

Section	Question	Response
<b>Existing Transmitter Description</b>	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
<b>Existing Transmitter Manufacturer and Type</b>	Manufacturer	
	Model	DCX Millenium
	Year	2001
	Type	Inductive Output Tube
	IOT Power Type	Two
	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?	No
	Manufacturer	
	Model	DCX Paragon
	Transmitter Type	Inductive Output Tube
	IOT Power Type	Two
	Power capacity	60 kW
	Justification for New Transmitter	The Channels are to Far apart for Re- tuning. Channel 16 Pre and Channel 31 post Repacking. This has been verified with Hitachi Kokusai Electric Comark LLC. Manufacturer of the existing channel 16 antenna

**Primary  
Transmitter**

**Other Transmitter Costs**

Section	Question	Response
<b>Electrical Service</b>	Service Entrance (3 phases 800A 208V)	No
	Switchgear (industrial 800 amp)	No
	Transformer (480V)	No
	Power	N/A
	Rigid Conduit and Wiring	Yes
	Size	4 inches
	Length	300.0 feet
	Other Electrical Service	Yes
	Description	Additional Electrical services will be required to move equipment out of the way of the new transmitter, magic Tee Combiner and CIF.
<b>HVAC Service</b>	Does the replacement transmitter require HVAC Service?	Yes
	Type	Cooling Only
	Size	15 tons
	Other Size	N/A
<b>Transmitter Building Addition/Modification or Leasehold Improvement</b>	Does the Transmitter Building require an addition, modification, other leasehold improvement?	Yes
	Size	4500.0 square feet
<b>Channel 14 Costs</b>	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
Electrical Costs for installing the transmitter	Electrical installations costs for HV cabinets, Heat Ex-changers, and low voltage control wiring.

**Antennas**

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

**Primary  
Antenna**

**Existing Antenna Information**

Section	Question	Response
<b>Existing Antenna Description</b>	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?	Yes
<b>Existing Antenna Manufacturer and Type</b>	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Bottom
	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) .....	1000.0 kW



Manufacturer	
Model	TFU- 24GBH-R 08SP
Year	2000

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?	Yes
	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	Bottom
	Polarization	Horizontal
	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	TFU-28GBH-R08 SP
Year	2018
Justification for New Antenna	Broadcast channel Frequency change from channel 16 post channel 31. Custom Directional antenna on the Bottom Stack of a three arm candelabra. Per Dielectric Quote # 700301CMZ

## Primary Antenna

### Other Antenna Costs

Section	Question	Response
<b>Combiner for Shared Antenna</b>	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
<b>Elbow Complex</b>	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
<b>Side Mount Brackets</b>	Do you require the separate purchase of side mount brackets for a high power antenna?	No
<b>Pattern Scatter Analysis</b>	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No
<b>Sweep Test</b>	Do you require the sweep testing of transmission line and antenna?	Yes

## Primary Antenna

### Other Antenna Cost Not Listed

Name	Description
<b>Test Transition</b>	RTT675 Per Quote 700301CMZ
<b>Custom Mount</b>	The Antenna requires a custom mount. That attaches to a Wide band FM Cogwheel antenna directly below the antenna and above the Candelabra arm
<b>15 to 20' section swivel</b>	RTLSCR675-20 per Quote 700301CMZ
<b>Elbows 6-75</b>	R72624 Per Quote 700301CMZ

**Interim  
Antenna**

**New Antenna Costs**

Section	Question	Response
<b>New Antenna Description</b>	Use	Interim
	Description of Use	N/A
	Change Type	Purchase New
	Ownership	Leased
	Owner	American Tower Corp
	Is antenna shared?	Yes
	Is antenna directional?	Yes
	Will antenna be located on or in close proximity to an antenna farm?	Yes
<b>New Antenna Manufacturer and Type</b>	Class	Full Power
	Mounting	Side Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	Broadband Slot
	Number of Stations Supported	5
	Number of Panels/Bays	24
	Lower Limit	482.00 MHz
	Upper Limit	590.00 MHz
	Design power capacity in use	75.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power) .....	60.0 kW
	Manufacturer	
	Model	TFU-24-WB /VP C160

Year	2018
Justification for New Antenna	Complex antenna structure with multiple stations trying to remain on the air during the transition to new channels. See American Tower Plan.

## Interim Antenna

### Other Antenna Costs

Section	Question	Response
<b>Combiner for Shared Antenna</b>	Do you need a Combiner for a Shared Antenna?	Yes
	Type	New
	Number of channels supported	5
	Frequencies of channels supported	RF channel
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	Yes
<b>Elbow Complex</b>	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	B
	Feed Line Size	8 3/16 inches
<b>Side Mount Brackets</b>	Do you require the separate purchase of side mount brackets for an antenna?	Yes

<b>Pattern Scatter Analysis</b>	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	No
<b>Sweep Test</b>	Do you require the sweep testing of transmission line and antenna?	Yes

**Enter a list of RF channel numbers.**

RF Channel Number
16
20
31
32
33

**Interim  
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



**Primary**  
**Transmission Line**

**Existing Transmission Line**

Section	Question	Response
<b>Existing Transmission Line Description</b>	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
<b>Existing Transmission Line Manufacturer and Type</b>	Manufacturer	
	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	1307 feet per run

**Primary** **New Transmission Line**  
**Transmission Line**

Section	Question	Response
<b>New Transmission Line Costs</b>	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	20 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	1307 feet per run
	Justification for New Transmission Line	The change in frequency from Channel 16 19.5' sections to channel 31 20' sections. 19.5' lines are not usable on channel 31 per Dielectric installation specifications.

**Primary** **Other Transmission Line Expenses Not Listed**  
**Transmission Line**

Information not provided.

**Interim**  
**Transmission Line**

**New Transmission Line**

Section	Question	Response
<b>New Transmission Line Costs</b>	Use	Interim
	Description of Use	N/A
	Change Type	Purchase New
	Type	Rigid
	Diameter	8 3/16 inches
	Segment Length	Broadband
	Other Segment Length	
	Number of parallel runs	1
	Length	1100 feet per run
	Justification for New Transmission Line	Single run Dielectric 8-3/16" Digitline with 950 ft vertical plus 150 ft. run equals 1100 ft. total; Includes nitrogen generator plus 200' of vertical run to get to the combiner network in ATC owned building located in the compound total WHRO 1300

Interim  
Transmission Line

Other Transmission Line Expenses Not Listed

Name	Description
Transmission line interim	200 Ft of 6 1/8 " line to connect to the Wibeband Interim antenna located in the ATC building approx 200 ft away.
Elbows	3 Elbows are needed to connect a new sections of 6 1/8' line to the interim broadband antenna located in American Tower owned 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	Leased
	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	1057874
Coordinates (NAD83 ( North American Datum of 1983))	Latitude (NAD83)	36° 48' 31.8" N-
	Longitude (NAD83)	076° 30' 11.3" W-
	Overall Structure Height	1258.84 feet
	Support Structure Height	1254.91 feet
	Ground Elevation Above Mean Sea Level (AMSL)	22.97 feet

	Structure Type	GTOWER - Guyed Structure Used for Communication Purposes
	Tower Owner	American Towers, LLC
	Date Constructed	02/03/2006

**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
40759	WTVZ-TV	DTV
67077	WPXV-TV	DTV
25940	WHRO-FM	FM
82574	WTPC-TV	DTV
25933	WHRV	FM
25932	WHRO-TV	DTV
47401	WTKR	DTV
9762	WGNT	DTV

**Primary  
Tower**

**Tower Modification Costs**

Section	Question	Response
<b>Engineering Study</b>	Please what type of engineering study is required, if any:	Study needed for tower with candelabra
<b>Tower Reinforcements</b>	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?	No

**Primary  
Tower**

**Other Tower Expenses Not Listed**

Information not provided.

**Outside  
Professional Services Costs**

Section	Question	Response
<b>Outside Project Management Services</b>	Do you require outside project management services?	Yes
	Number of Hours	175
	Explanation	This is for the project management costs associated with American Tower Corporation. This is a very complicated site and will require Project management from all Broadcasters collocated on the tower. Est is based on Previous conversion to digital in 2001
<b>Outside RF consulting Engineering Services</b>	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
<b>Attorney and Other Outside Consulting Services</b>	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	Yes
	Environmental Assessment	Yes
	ASR Modification	Yes
	FAA Consultation (including preparation of FAA Form 7460)	Yes
	Negotiation of Lease and other Matter for Shared Locations	Yes
	Prepare or Review FCC Form 399 for Reimbursement	Yes
	Address transition timing and coordination issues w/ other stations and wireless providers	Yes
<b>RF Field Engineering Services</b>	Comprehensive coverage verification via field study	Yes

RF exposure measurements	Yes
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
RF System Test	Testing of the combiner to ensure all one (1) frequencies are tuned for optimal patterns.
Migratory Bird Assessment	Tower located in a migratory Bird Path
Site Coordination Meeting	Site coordination meetings with all broadcasters, contractors and vendors involved with the site deliveries and construction. This cost is for travel and logistics expenses accrued.

## Other Expenses

Section	Question	Response
<b>AM Pattern Disturbance</b>	Is an Impact Study needed?	No
	Is Remediation needed?	No
<b>Facility Expenses</b>	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
<b>Permit and Filing Costs</b>	Local Zoning	Yes
	Non-zoning permits	Yes
	BLM or NFS Coordination	Yes
	FCC Construction Permit Minor Change	Yes
	FCC License to Cover Application	Yes
	FCC Special Temporary Authority Application	Yes
<b>Other Miscellaneous Expenses</b>	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?	Yes
	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
<b>Public Hearing</b>	Cost associated with Public hearings that might be required due to the repacking process and proximity of houses located around the tower
<b>Site Security</b>	Site Security Company during construction for theft prevention and vandalism
<b>Special Insurance Rider</b>	Special insurance rider will need to be purchased by WHRO for the Homes located within 1000' ft of the tower. WHRO owns all of the property surrounding the tower America Tower Leases only a small portion of the ground space, Anchor point Base and Buildin
<b>ATC One Time Tower Rental</b>	ATC have 3 repack customers, one non repacked customer and one new customer on the Norfolk TT. The interim Main side mount antenna will allow the broadcasters to minimize their OTA disruption, maintain their coverage contour, complete in safe manner
<b>Grading Road</b>	The Gravel Road Will be destroyed during the repacking andwill require several Gradings during the process due to the complexity of the site and total number of broadcasters impacted

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 DCX Paragon	\$1,182,100.00	\$1,130,800.00		\$0.00	
Other Electrical Service: Additional Electrical services will be required to move equipment out of the way of the new transmitter, magic Tee Combiner and CIF.	<i>\$65,000.00</i>	\$65,000.00	Other electrical expenses to move an reinstall switch gear for the new Transmitter. Walls need to be moved that currently have Electrical distribution for F2 FM Stations and DTV High Voltage supplies.	N/A	N/A
Two IOT system (60 kW)	\$954,000.00	\$907,000.00	N/A	N/A	N/A

Other -- Building Addition Size: 4500.0	<b>\$52,000.00</b>	\$52,000.00	Walls have to be removed to install the new transmitter. This includes removing a mezzanine to mount and install the magic Tee and Mask filter.	N/A	N/A
15 Ton system	\$55,800.00	\$53,000.00	The new transmitter, CIF and Magic Tee will need to be located in a room that does not have AC at this time. A new AC will be needed to keep the CIF, magic tee, Combiner and temperature from Overheating and drifting in power.	N/A	N/A

4" Rigid Conduit and Wiring (Cost per foot)	\$30,300.00	\$28,800.00	After Digital conversion in 2009 all conduits and switch gear was removed that connected to the analog transmitter.	N/A	N/A
Electrical Costs for installing the transmitter	<b>\$25,000.00</b>	\$25,000.00	This cost will be needed to cover the costs of installing the transmitter and connecting to the existing 600 KVA Flywheel UPS system. sub controls and generator Sub panels changes	N/A	N/A
<b>Sub-total</b>	\$1,182,100.00	\$1,130,800.00	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$3,539,667.00	\$2,852,346.00	N/A	\$0.00	N/A

## Components

Information not provided.

## 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
<b>Interim Antenna TFU-24-WB/VP C160</b>	<b>\$319,030.00</b>	<b>\$175,833.00</b>		<b>\$0.00</b>	
Elbow complex, broadband, at antenna input, per 8 3/16. feedline (if needed)	\$18,950.00	\$4,500.00	Shared expense with Other Broadcasters being repacked See American Tower Document: WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A
New combiner, cost per channel (without antenna)	\$84,200.00	\$48,333.00	Shared Costs with other Broadcasters being repacked see American Tower Project Costs Estimate. Microsoft Excel Document WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A



Combiner output splitting /switching for dual feed lines, if applicable	\$126,000.00	\$50,000.00	Shared Costs See American Tower document: WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates plus 10,000.00 as shared installation Costs line item 3-C-2	N/A	N/A
UHF - High Power, Side Mount, basic slot antenna, 24 bay,, 60 - 65 kW input, directional,, elliptically or circularly polarized	<b>\$60,000.00</b>	\$60,000.00	the original number of 235,000 has been reduced to 60,000 due to the number of Broadcasters using the Broadband antenna. See American Tower Project Costs Est. Microsoft Excel Document: WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A

Sweep test of existing antenna	\$6,730.00	\$4,500.00	Shared expense with Other Broadcasters Being repacked See American Tower Document: WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A
Side mount brackets for high power antennas (if not included in antenna base cost)	\$23,150.00	\$8,500.00	Shared cost with Other Broadcasters being repacked See WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A
<b>Primary Antenna TFU-28GBH-R 08 SP</b>	<b>\$304,218.00</b>	<b>\$569,207.00</b>		<b>\$0.00</b>	
Custom Mount	<b>\$28,000.00</b>	\$28,000.00	Custom mount to install the new antenna on the existing FM cogwheel antenna.	N/A	N/A
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	N/A
15 to 20' section swivel	<b>\$3,928.00</b>	\$3,928.00	per quote line item 3 Quote # 700301CMZ	N/A	N/A

Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed)	\$12,300.00	\$10,984.00	Per Dielectric Quote 700301CMZ WHRO	N/A	N/A
Test Transition	<b>\$2,420.00</b>	\$2,420.00	per Quote # 700301CMZ line item 5	N/A	N/A
Elbows 6-75	<b>\$3,840.00</b>	\$3,840.00	per Quote # 700301CMZ line item 4	N/A	N/A
UHF - High Power Top Mount (200-1000 kW), One station antenna, horizontally polarized	\$247,000.00	\$513,635.00	Per Dielectric Quote 700301CMZ. The antenna is on the Bottom Stack of a candelabra tower with 5 other broadcasters. Current channel 40 is located on the top of our antenna. the antenna is also custom mounted on top of a FM Cogwheel antenna structure.	N/A	N/A
<b>Sub-total</b>	\$623,248.00	\$745,040.00	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$3,539,667.00	\$2,852,346.00	N/A	\$0.00	N/A

## Components

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
Interim Transmission Line	\$480,260.00	\$134,127.00		\$0.00	
Transmission line interim	<i>\$35,600.00</i>	\$35,600.00	200 Ft of 6 1 /8" line to connect to the interim antenna per American Tower Document WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A
Elbows	<i>\$5,760.00</i>	\$5,760.00	Elbows to connect the vertical run to the interim antenna 3 Total @ 1930.00 each per Dielectric Quote	N/A	N/A

Rigid Transmission Line - copper, 8 3/16" broadband	\$438,900.00	\$92,767.00	The remaining costs are covered by other broadcasters collocated on the same tower that will be repacked Per American Tower Document WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A
<b>Primary Transmission Line</b>	<b>\$264,014.00</b>	<b>\$250,944.00</b>		<b>\$0.00</b>	
Rigid Transmission Line - copper, 6 1/8"	\$264,014.00	\$250,944.00	N/A	N/A	N/A
<b>Sub-total</b>	<b>\$744,274.00</b>	<b>\$385,071.00</b>	N/A	\$0.00	N/A
<b>Total for all systems</b>	<b>\$3,539,667.00</b>	<b>\$2,852,346.00</b>	N/A	\$0.00	N/A

## Components

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
<b>Primary Tower GTOWER</b>	<b>\$599,000.00</b>	<b>\$255,000.00</b>		<b>\$0.00</b>	
Minor tower reinforcement /modifications	\$158,000.00	\$50,000.00	Shared cost with Other Broadcasters that are being repacked per ATC document WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	\$421,000.00	\$200,000.00	Shared cost of the broadcasters that are going to be repacked per American Tower Document WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A

Structural engineering tower load study for a documented tower with candelabra	\$20,000.00	\$5,000.00	Part of the total tower rebuild with 4 other broadcasters American Tower Document WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A
<b>Sub-total</b>	\$599,000.00	\$255,000.00	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$3,539,667.00	\$2,852,346.00	N/A	\$0.00	N/A

## Components

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 Justification
<b>Outside Professional Services</b>	<b>\$203,505.00</b>	<b>\$149,500.00</b>		<b>\$0.00</b>	
Project management of the transition	\$27,650.00	\$9,000.00	Shared Expense via American Tower Doc WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	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
Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$7,000.00	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
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), 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
Prepare request for Special Temporary Authorization	\$2,050.00	\$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	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), License to Cover Application	\$2,365.00	\$2,250.00	N/A	N/A	N/A
Attorney Fees - Negotiation of lease and other matters for shared locations	\$4,210.00	\$4,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File request for Special Temporary Authorization	\$3,680.00	\$3,500.00	N/A	N/A	N/A
NEPA Section 106 environmental review, if needed	\$6,310.00	\$2,000.00	Per ATC Doc WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A

Environmental Assessment, if triggered by NEPA Section 106 review or for certain structures over 450 feet	\$10,520.00	\$3,500.00	Per ATC Doc WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A
ASR modification (prepare FCC Form 854)	\$2,105.00	\$800.00	Shared cost of the Broadcasters being repacked	N/A	N/A
FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase	\$2,105.00	\$700.00	To reimburse American Tower if needed	N/A	N/A
Comprehensive coverage verification via field study, if needed	\$84,200.00	\$80,000.00	N/A	N/A	N/A
RF Exposure Measurements	\$21,050.00	\$6,500.00	Shared Expense	N/A	N/A
RF System Test	<b>\$5,000.00</b>	\$5,000.00	Perform systems checks on Combiner network due to the volume of broadcaster using the antenna ATC Doc WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A

Migratory Bird Assessment	<b>\$500.00</b>	\$500.00	estimated costs for being in a bird migration mitigation ATC DocWHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A
Site Coordination Meeting	<b>\$1,250.00</b>	\$1,250.00	Complex tower rebuild multiple Broadcaster involvement ATC Doc WHRO IM Norfolk Tall Tower 10152 Repack Cost Estimates	N/A	N/A
<b>Sub-total</b>	<b>\$203,505.00</b>	<b>\$149,500.00</b>	<b>N/A</b>	<b>\$0.00</b>	<b>N/A</b>
<b>Total for all systems</b>	<b>\$3,539,667.00</b>	<b>\$2,852,346.00</b>	<b>N/A</b>	<b>\$0.00</b>	<b>N/A</b>

## Components

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
<b>Other Expenses</b>	<b>\$187,540.00</b>	<b>\$186,935.00</b>		<b>\$0.00</b>	
Develop and air announcement of upcoming channel change	<i>\$15,000.00</i>	\$15,000.00	N/A	N/A	N/A
DTV Medical Facility Notification	\$11,550.00	\$11,000.00	N/A	N/A	N/A
FCC Filing Fees - Form 2100 minor change CP application	\$1,110.00	\$1,070.00	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
FCC Filing Fees - Special Temporary Authorization request	\$195.00	\$190.00	N/A	N/A	N/A
Non-zoning permits	<i>\$5,000.00</i>	\$5,000.00	N/A	N/A	N/A
BLM or NFS Coordination	<i>\$2,000.00</i>	\$2,000.00	N/A	N/A	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	<i>\$3,500.00</i>	\$3,500.00	N/A	N/A	N/A

Equipment Delivery and Handling Charges	<b>\$12,500.00</b>	\$12,500.00	N/A	N/A	N/A
Equipment Storage	<b>\$24,000.00</b>	\$24,000.00	N/A	N/A	N/A
MVPD Notification of Channel Change	<b>\$500.00</b>	\$500.00	N/A	N/A	N/A
Public Hearing	<b>\$500.00</b>	\$500.00	Costs associated with Public hearing materials sent to surrounding homes, newspapers ETC.	N/A	N/A
Site Security	<b>\$45,000.00</b>	\$45,000.00	Very complicated site installation. lots o expensive materials lying around very easy to steal. The compound is gated but access under ditch area is possible	N/A	N/A
ATC One Time Tower Rental	<b>\$57,600.00</b>	\$57,600.00	Rental Fee associated with repacking for the Interim antenna	N/A	N/A

Special Insurance Rider	<b>\$2,500.00</b>	\$2,500.00	Special insurance Rider to cover the costs of the homes that are within 2000 ft of the tower. ATC owes the tower WHRO Owns all the Land. ATC Lease the Base, Anchors and Building land from WHRO	N/A	N/A
Grading Road	<b>\$4,500.00</b>	\$4,500.00	Regrading drive access to the site for at least 1 year	N/A	N/A
Local Zoning	<b>\$1,750.00</b>	\$1,750.00	N/A	N/A	N/A
<b>Sub-total</b>	\$187,540.00	\$186,935.00	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$3,539,667.00	\$2,852,346.00	N/A	\$0.00	N/A

## Components

Information not provided.

**Cost  
Information**

**Grand Total**

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	\$3,539,667.00	\$2,852,346.00	\$0.00

**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"> <li>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.</li> <li>2. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.</li> <li>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.</li> </ol>	

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><b>Chris Gunnar Gunnufsen</b>  <i>Vice President of Technology</i></p> <p>07/10/2017</p>

## Attachments