

Federal Communications Commission

(REFERENCE COPY - Not for submission)

FCC Form 399: Reimbursement Request

Facility ID:	57840	Service: DTV	Call Sign:	WSLS-TV	Channel: 34 (UHF)
File	000002	7856			
Number:					
FRN: 002	25636598	Date	07/26		
		Submitted:	/2018		

Applicant Name, Type, and Contact Information

Information

Applicant	Address	Phone	Email	Applicant Type
GRAHAM MEDIA GROUP, VIRGINIA, LLC Doing Business As: d/b/a WSLS-TV	Ricky Williams 401 Third Street SW Roanoke, VA 24011 United States	+1 (540) 512-1542	rwilliams@wsls. com	Limited Liability Company

Reimbursement Contact Name and Information Reimbursement Contact Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Ontact Name and Information

Contact Information	Applicant	Address	Phone	Email
	William T Godfrey , Jr Consulting Engineers Kessler and Gehman Associates, Inc.	William T. Godfrey, Jr. Kessler and Gehman Associates, Inc. 507-D NW 60th Street Gainesville, FL 32607 United States	+1 (352) 332-3157	jeff@kesslerandgehman. 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.	No
	Briefly describe transition plan	Replace main and aux transmitters. Replace old analog antenna system with new antenna system designed for assigned channel. Operate existing main through assigned phase. Replace aux antenna and line. Map and analyze tower; design and modify if needed.

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

uxiliary	Add Transmitter Information					
ransmitter	Section	Question	Response			
	Existing Transmitter Description	Type of change	Purchase New			
		Use	Auxiliary (Backup)			
		Description of Use	Auxiliary			
		Ownership	Owned			
		Owner	N/A			
		Site	N/A			
		Is this transmitter currently shared with another station?	No			
		Is this transmitter currently in operating condition?	Yes			
	Existing Transmitter	Manufacturer				
	Manufacturer and Type	Model	Diamond			
		Year	2007			
		Туре	Solid State			
		Solid State Cooling	Air Cooled			
		Solid State Power Capacity	1.8 kW			

Add Transmitter Information

Auxiliary	New Transmitter Costs					
Transmitter	Section	Question	Response			
	New Transmitter	Use	Auxiliary (Backup)			
		Change Type	Purchase New			
		Is this a request for upgraded equipment?	No			
		Manufacturer				
		Model	TBD			
		Transmitter Type	Solid State			
		Solid State Cooling	Air Cooled			
		Solid State Power capacity	1.8 kW			
		Justification for New Transmitter	The manufacturer of the existing transmitter advises that the transmitter cannot be retuned to the assigned channel. See attachment.			

Auxiliary	Other Transmitter Costs					
Transmitter	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	3 inches
	Length	100.0 feet
	Other Electrical Service	No
	Description	N/A
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	Туре	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Auxiliary Other Transmitter Cost Not Listed

Transmitter Information not provided.

Primary	Existing Transmitter Information					
Transmitter	Section	Question	Response			
	Existing Transmitter Description	Type of change	Purchase New			
		Use	Primary (Main)			
		Description of Use	N/A			
		Ownership	Owned			
		Owner	N/A			
		Site	N/A			
		Is this transmitter currently shared with another station?	No			
		Is this transmitter currently in operating condition?	Yes			
	Existing Transmitter	Manufacturer				
	Manufacturer and Type	Model	Sigma			
		Year	2007			
		Туре	Inductive Output Tube			
		IOT Power Type	Two			
		Power Capacity	30 kW			

Existing Transmitter Information

Primary	New Transmitter Costs					
Transmitter	Section	Question	Response			
	New Transmitter	Use	Primary (Main)			
		Change Type	Purchase New			
		Is this a request for upgraded equipment?	No			
		Manufacturer				
		Model	DCX Paragon 2			
		Transmitter Type	Inductive Output Tube			
		IOT Power Type	Two			
		Power capacity	50 kW			
		Justification for New Transmitter	The manufacturer of the existing IOT transmitter advises that the transmitter cannot be retuned to the assigned channel. A new Comark Paragon MSDC IOT transmitter is the basis for a replacement as suggested by the FCC. See attachment.			

Primary	Other Transmitter Costs			
Transmitter	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	3 inches	
		Length	100.0 feet	
		Other Electrical Service	Yes	
		Description	Additional electrical service needed for the new transmitter and RF plumbing installation.	
HVA	HVAC Service	Does the replacement transmitter require HVAC Service?	Yes	
		Туре	Heating and Cooling	
		Size	10 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	700.0 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	

Primary	Other Transmitter Cost Not Listed		
Transmitter	Name	Description	
	Additional Interior RF System	Interior RF System Existing Transmitter to Interim Transmission line	

Antennas Section		Question	Response
Antenna Rela	ated Expenses	Do you have antenna related expenses?	Yes

Auxiliary	Add Antenna Information			
Antenna	Section	Question	Response	
	Existing Antenna Description	Type of change	Purchase New	
		Antenna Use	Auxiliary (Backup)	
		Description of Use	Auxiliary	
		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?	Yes	
	Existing Antenna	Class	Full Power	
	Manufacturer and Type	Mounting	Side Mount	
		Antenna position in stack	Not in Stack	
		Polarization	Horizontal	
		Туре	Slotted Coaxial	
		Number of Stations Supported	N/A	
		Number of Panels	N/A	
		Design power capacity in use	N/A	
		Lower Limit	N/A	
		Upper Limit	N/A	
		Other Antenna Type	N/A	
		ERP: (Effective Radiated Power)	65.0 kW	

Manufacturer	
Model	TLP-24H
Year	2001

Antenna	Section	Question	Response
	New Antenna Description	Use	Auxiliary (Backup)
		Description of Use	Auxiliary
		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
New Antenna Manufacturer		Will antenna be located on or in close proximity to an antenna farm?	Yes
		Class	Full Power
	Manufacturer and Types	Mounting	Side Mount
		Antenna position in stack	Not in Stack
		Polarization	Horizontal
		Туре	Slotted Coaxial
		Number of Stations Supported	N/A
		Number of Panels/Bays	N/A
		Lower Limit	N/A
		Upper Limit	N/A
		Design power capacity in use	N/A
		Other Antenna Type	N/A
		ERP: (Effective Radiated Power)	65.0 kW
		Manufacturer	
		Model	TBD

Year	2018
Justification for New Antenna	The existing primary antenna is a single channel slotted coaxial which cannot accommodate the assigned channel.

Other Antenna Costs

Auxiliary Antenna

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	No
	Туре	
	Number of channels supported	N/A
	Frequencies of channels supported	N/A
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	N/A
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	No
	Broadband or Single Channel?	N/A
	Feed Line Size	N/A
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
AntennaOther Antenna Cost Not ListedInformation not provided.

Primary	Existing Antenna Information			
Antenna	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?	Yes	
	Existing Antenna	Class	Full Power	
	Manufacturer and Type	Mounting	Side Mount	
		Antenna position in stack	Not in Stack	
		Polarization	Horizontal	
		Туре	Slotted Coaxial	
		Number of Stations Supported	N/A	
		Number of Panels	N/A	
		Design power capacity in use	N/A	
		Lower Limit	N/A	
		Upper Limit	N/A	
		Other Antenna Type	N/A	
		ERP: (Effective Radiated Power)	1000.0 kW	

Manufacturer	
Model	TFU- 30DSC-R- C170
Year	2006

Antenna	Section	Question	Response
	New Antenna	Use	Primary (Main
	Description	Description of Use	N/A
		Change Type	Purchase Nev
		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?	Yes
	New Antenna	nd Types Mounting	Full Power
	Manufacturer and Type		Top Mount
		Antenna position in stack	Not in Stack
		Polarization	Elliptical
		Туре	Slotted Coaxial
		Number of Stations Supported	N/A
		Number of Panels/Bays	N/A
		Lower Limit	N/A
		Upper Limit	N/A
		Design power capacity in use	N/A
		Other Antenna Type	N/A
		ERP: (Effective Radiated Power)	930.0 kW
		Manufacturer	
		Model	TFU-30DSC /VP-R C170

Year	2018
Justification for New Antenna	The existing primary antenna is a single channel slot which cannot accommodate the assigned channel. The proposed antenna is e- pol which is considered an upgrade with a 15% delta in costs according to manufacturer However, the 399 is budgeted for h-pol.

Primary Other Antenna Costs

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

	Feed Line Size	4 1/16 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?	No
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Primary
Antenna Other Antenna Cost Not Listed Name Description Mounting Support Pole Required for top mounting main antenna
(first priority station)

Transmissior	n Seffien	Question	Response
	Transmission Line Related Expenses	Do you have transmission line related expenses?	Yes

Add Transmission Line Transmission Line

ransmissio	n Line Section	Question	Response
	Existing Transmission Line Description	Type of change	Utilize Existing
		Use	Auxiliary (Backup)
		Description of Use	Auxiliary
		Ownership	Owned
		Owner	N/A
Line		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	ERI
		Туре	Flexible Air
		Diameter	Other
		Other Diameter	2 1/4 inches
		Segment Length	N/A
		Other Segment Length	N/A
		Number of parallel runs	1
		Length	200 feet per run

Auxiliary	Other Transmission Line Expenses Not Listed ary				
Transmissic	n Line	Description			
	Sweep Tests	Sweep test to verify performance on			

assigned channel.

Primary	Existing Transmission Line			
Transmissio	n 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	Manufacturer		
	Line Manufacturer and Type	Туре	Rigid	
		Diameter	4 1/16 inches	
		Other Diameter	N/A	
		Segment Length	19 1/2 inches	
		Other Segment Length	N/A	
		Number of parallel runs	1	
		Length	225 feet per run	

Primary	New Transmission Line				
Transmissio	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		
		Туре	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	270 feet per run		
		Justification for New Transmission Line	New longer line for top mount antenna must be larger diameter to achieve assigned ERP. This must be done to recover lost coverage area since the station will receive in excess of 1% interference.		

Primary Other Transmission Line Expenses Not Listed

Primary Other Transmission Transmission

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

mary	Existing	Tower

Primary	Existing Tower			
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?	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?	Yes	
		Is tower compliant with Rev G?	No	
	Existing Tower Structure	Do you have a tower registration number?	Yes	
	Registration	ASR Number	1024381	
	Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	37° 12' 03.3" N-	
		Longitude (NAD83)	080° 08' 52.8" W-	
		Overall Structure Height	242.78 feet	
		Support Structure Height	170.93 feet	

Ground Elevation Above Mean Sea Level (AMSL)	3720.10 fee
Structure Type	TOWER - Free Standing or Guyed Structure
Tower Owner	Graham Media Group, Virginia, LLC
Date Constructed	01/01/1980

Primary Tower Modification Costs

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

Primary Tower Rigging Costs

Tower

Tower

Section	Question	Response
Tower Rigging Costs	Complex Tower	Terrain constrained
Helicopter Services Required	Are helicopter services required?	Yes

Primary Other Tower Expenses Not Listed

Tower Information n

Information not provided.

Outside Professional	Section	Question	Response
	Services Costs Outside Project Management Services	Do you require outside project management services?	Yes
		Number of Hours	600
		Explanation	It will be necessary to schedule and coordinate multiple vendors, complete progress reports, and update Schedule 399. Station does not have available personnel or personnel trained in project management for such complex projects.
	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

		1
	Quantity	2
	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
Services	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare and file Form FCC License to Cover Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	2
	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	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	45
Justification	It will be necessary to survey the site, plan the equipment, develop specifications for purchasing, and oversee multiple vendor RF projects. Station does not have available personnel trained in such services.

Outside Other Professional Services Expenses Not Listed

Professional	Services Costs	Description
	Other Engineering Services	Fewer Project Management "PM" tasks are required & Other Engineering Services "OES" are required, therefore the PMthe PM total has been reduced to 600 hrs (\$90,000 at \$150/hr), & a new OES category has been created & funded with the money removed from PM.

Other	Section	Question	Response
Expenses	AM Pattern Disturbance	Is an Impact Study needed?	No
		Is Remediation needed?	No
	Facility Expenses	Name	N/A
		Other Distributed Transmission System Expenses Not listed	N/A
		Name	N/A
		Is Notification of a Medical Facility required as a result of DTV broadcasting?	Yes
	Permit and Filing Costs	Local Zoning	No
		Non-zoning permits	Yes
		BLM or NFS Coordination	No
		FCC Construction Permit Minor Change	Yes
		FCC License to Cover Application	Yes
		FCC Special Temporary Authority Application	Yes
	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?	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 Not Listed

Expenses Information not provided.

Transmitters

Cost Information

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification		Actual Cost Justification
Primary Transmitter DCX Paragon 2	\$1,373,450.00	\$1,801,470.00		\$307,738.11	
Other Electrical Service: Additional electrical service needed for the new transmitter and RF plumbing installation.	\$100,000.00	\$100,000.00	N/A	\$67,368.61	See attached Osborn Engineering Quote and summary page for additional details.
Additional Interior RF System	\$140,000.00	\$140,000.00	N/A	\$750.00	N/A
Other Building Addition Size: 700.0	\$50,000.00	\$50,000.00	Need pad for new heat exchangers and beam supplies and also need ice shield.	\$5,869.50	See attached Osborn Engineering Quote and summary page for additional details.
10 Ton system	\$60,500.00	\$57,500.00	N/A	N/A	N/A
3" Rigid Conduit and Wiring (Cost per foot)	\$5,200.00	\$4,900.00	N/A	N/A	N/A

Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$24,300.00	N/A	N/A	N/A
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	N/A	N/A	N/A
Two IOT system (50 kW)	\$954,000.00	\$1,388,470.00	This is the cost for a new 2- tube, DCX Paragon-2 MSDC-IOT digital UHF transmitter from the most recent Comark price list.	\$233,750.00	N/A
Auxiliary Transmitter TBD	\$194,950.00	\$185,500.00		\$20,141.25	
3" Rigid Conduit and Wiring (Cost per foot)	\$5,200.00	\$4,900.00	N/A	N/A	N/A
Transformer 3 phase /480v - 150 KVA	\$25,550.00	\$24,300.00	N/A	N/A	N/A
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	N/A	N/A	N/A
UHF - Air Cooled Solid State Transmitter 1 - 2.5 kW	\$126,000.00	\$120,000.00	N/A	\$20,141.25	N/A
Sub-total	\$1,568,400.00	\$1,986,970.00	N/A	\$327,879.36	N/A
Total for all systems	\$4,659,945.00	\$4,679,794.00	N/A	\$842,239.53	N/A

Components

Actual Information Description	File Name	
Other Electrical Service: Additional electrical service needed for the new transmitter and RF plumbing installation.	Component Description:	Facility Electrical Survey and Condition Assessment for WSLS (See Osborn Engineering Quote) \$6,616.51
	Component Description:	WSLS Osborn inv #29669 Prof Srvs through 7-29-18 UL20180726jgv1
	Amount:	\$60,252.10
	Component Description:	Developed a Solution for Electrical and HVAC on New Channel - Also See attached "KGA Quote"
	Amount:	\$500.00
Additional Interior RF		
System	Component Description:	Developed a Solution for Transmitter & Mask Filter on New Channel - Also See attached "KGA Quote"
	Amount:	\$750.00

Other Building Addition		
Size: 700.0	Component Description:	Inv 1034840 WSLS Professional Services UL20180511jgv1
	Amount:	\$494.50
	Component Description:	Facility Building Survey and Condition Assessment for WSLS (See Osborn Engineering Quote) \$5,375.00
	Amount.	43,373.00
10 Ton system	Information not provided.	
3" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	
Transformer 3 phase/480v - 150 KVA	Information not provided.	
Switchgear - industrial 800 amp	Information not provided.	
Two IOT system (50 kW)		
	Component Description:	Inv: WSLS THU9EVO-24 transmitter 25% down pmt UL20180312
	Amount:	\$233,750.00
3" Rigid Conduit and Wiring (Cost per foot)	Information not provided.	
Transformer 3 phase/480v - 150 KVA	Information not provided.	
Switchgear - industrial 800 amp	Information not provided.	

UHF - Air Cooled Solid State Transmitter 1 - 2.5 kW	Component Description:	Inv: WSLS TMU9-3 aux transmitter 25% down pmt
		UL20180313
	Amount:	\$20,141.25

Antennas

Cost Information

Description Primary Antenna TFU-30DSC /VP-R C170	Predetermined Cost Estimate \$432,950.00	Estimated Cost \$384,533.00	Estimated Cost Justification	Actual Cost \$291,204.90	Actual Cost Justification
Mounting Support Pole	\$104,000.00	\$104,000.00	Required for top mount support (refer to attached quote)	\$46,800.00	N/A
Side mount brackets for high power antennas (if not included in antenna base cost)	\$23,150.00	\$21,750.00	N/A	\$9,787.50	N/A
Elbow complex, single channel, at antenna input, per 4 1/16. feedline (if needed)	\$9,570.00	\$12,383.00	Elbow complex is actually 6-1 /8". See attached Dielectric quote.	\$11,144.70	N/A
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	\$2,880.00	N/A

UHF - High	\$289,500.00	\$240,000.00	Recognizing	\$220,592.70	N/A
Power Top			that e-pol is		
Mount			an upgrade,		
(200-1000			the station		
kW), One			is budgeting		
station			for "h-pol		
antenna,			only" which		
elliptically			Dielectric		
or			said is a		
circularly			15% delta.		
polarized			Therefore,		
			the		
			estimated		
			cost for an		
			h-pol		
			antenna is		
			only		
			\$240,000		
			instead of		
			the		
			estimated		
			cost of		
			\$275,000		
			for an e-pol		
			antenna		
			antenna (15%).		
Auxiliary Antenna TBD	\$213,940.00	\$147,216.00		\$28,816.00	
Antenna	\$213,940.00 \$5,260.00	\$147,216.00 \$5,000.00		\$28,816.00 N/A	N/#
Antenna TBD			(15%).		N//
Antenna TBD Pattern			(15%).		N//
Antenna TBD Pattern scatter			(15%).		N//
Antenna TBD Pattern scatter analysis for			(15%).		N//
Antenna TBD Pattern scatter analysis for side mount			(15%).		N//
Antenna TBD Pattern scatter analysis for side mount high/med			(15%).		N//
Antenna TBD Pattern scatter analysis for side mount high/med power			(15%).		N//
Antenna TBD Pattern scatter analysis for side mount high/med power antennas			(15%).		N/#
Antenna TBD Pattern scatter analysis for side mount high/med power antennas (if not			(15%).		N/A

	\$646,890.00	\$531,749.00	N/A	\$320,020.90	N/A
Sub-total					
UHF - Lower Power Side Mount, One station antenna - medium power (50- 200 kW), horizontally polarized	\$89,400.00	\$28,816.00	***System Notice: Estimate adjusted and locked because line has been superseded. ***	\$28,816.00	N/A
UHF - Lower Power Side Mount, One station antenna - medium power (50- 200 kW), horizontally polarized	\$89,400.00	\$85,000.00	N/A	N/A	N/A
Sweep test of existing antenna	\$6,730.00	\$6,400.00	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

Actual Information Description	File Name	
Mounting Support Pole	Component Description:	Inv MAN00430 WSLS Support pole
	Amount:	45 perc pmt 2 UL20180713jgv1 \$46,800.00
Side mount brackets for high power antennas (if not included in antenna base cost)	Component Description:	Inv MAN00430 WSLS Side mt brckts 45 perc pmt
	Amount:	2 UL20180713jgv1 \$9,787.50
Elbow complex, single channel, at antenna input, per 4 1/16. feedline (if needed)	Component Description:	Inv MAN00325 WSLS Elbow Complex
	Amount:	UL20180423jg \$5,572.35
	Component Description:	Inv MAN00430 WSLS Elbox comp 45 perc pmt 2
	Amount:	UL20180713jgv1 \$5,572.35
Sweep test of existing antenna		
anoma	Component Description:	Inv MAN00430 WSLS Sweep tests 45 perc pmt 2 UL20180713jgv1
	Amount:	\$2,880.00

UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	Component Description:	Inv MAN00325 WSLS TFU-30DSC VP-R C170 etc Main Antenna UL20180423jg
	Amount:	\$140,030.10
	Component Description:	Inv MAN00430 WSLS Main ant 45 perc pmt 2 UL20180713jgv1
	Amount:	\$80,562.60
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.	
Sweep test of existing antenna	Information not provided.	
UHF - Lower Power Side Mount, One station antenna - medium power (50-200 kW), horizontally polarized	Information not provided.	
UHF - Lower Power Side Mount, One station antenna - medium power (50-200 kW), horizontally polarized	Component Description:	Inv: WSLS TLP-24H (C)VP aux antenna 50 percent down pmt UL20180316
	Amount:	\$28,816.00

Transmission Line

Cost Information

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Transmission Line	\$54,540.00	\$51,840.00		\$41,287.06	
Rigid Transmission Line - copper, 6 1/8"	\$54,540.00	\$51,840.00	N/A	\$41,287.06	N/A
Auxiliary Transmission Line	\$6,400.00	\$6,400.00		\$0.00	
Sweep Tests	\$6,400.00	\$6,400.00	N/A	N/A	N/A
Sub-total	\$60,940.00	\$58,240.00	N/A	\$41,287.06	N/A
Total for all systems	\$4,659,945.00	\$4,679,794.00	N/A	\$842,239.53	N/A

Actual Information Description	File Name	
Rigid Transmission Line - copper, 6 1/8"	Component Description: Amount:	Inv MAN00430 WSLS Trans line 45 perc pmt 2 UL20180713jgv1 \$20,643.53
	Component Description: Amount:	Inv MAN00325 WSLS Transmission Line UL20180423jg \$20,643.53

Tower Equipment and Rigging Costs

Cost Information

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Tower TOWER	\$1,735,600.00	\$1,362,000.00		\$40,134.56	
Serious tower reinforcement /modifications	\$1,052,000.00	\$700,000.00	N/A	\$22,664.56	N/A
Structural engineering tower load study for well documented tower	\$12,600.00	\$12,000.00	N/A	\$17,470.00	The initial tower study was performed, and a potential issue with the top plate on the tower was discovered which required additional analysis.
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	\$421,000.00	\$400,000.00	N/A	N/A	N/A
Tower Helicopter Lift	\$250,000.00	\$250,000.00	N/A	N/A	N/A
Sub-total	\$1,735,600.00	\$1,362,000.00	N/A	\$40,134.56	N/A

Total for all	\$4,659,945.00	\$4,679,794.00	N/A	\$842,239.53	N/A
systems					

Actual Information Description	File Name	
Serious tower reinforcement/modifications	Component Description:	WSLS ERI inv #WSLS-02 Tower work 50 perc dp plus freight UL20180723jgv1
	Amount:	\$22,664.56

Structural engineering
tower load study for well
documented tower

Component Description: Inv: WSLS Tower Data Collection UL20180402 \$2,720.00 Amount: **Component Description:** Coordinate Tower mapping & analyses - Also See Attached "KGA Quote" Amount: \$750.00 **Component Description:** Inv 1805084V1 WSLS Mod Design and Structural Analysis UL20180424jg v1 Amount: \$7,500.00 **Component Description:** Inv: WSLS **Structural Analysis** UL20180305 Amount: \$4,500.00 **Component Description: Coordinate Tower** Modifications - Also See Attached "KGA Quote" Amount: \$1,250.00 **Component Description:** Develop an Upgrade or Replacement solution for Tower -Also See Attached "KGA Quote" Amount: \$750.00

Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	Information not provided.
Tower Helicopter Lift	Information not provided.

Outside Professional Services

Cost Information

	Predetermined	Estimated	Estimated Cost		Actual Cost
Description	Cost Estimate	Cost	Justification	Actual Cost	Justification
Outside Professional Services	\$452,925.00	\$546,250.00		\$112,917.65	
Other Engineering Services	\$97,500.00	\$97,500.00	Fewer Project Management "PM" tasks are required & Other Engineering Services "OES" are required, therefore the PM total has been reduced to 600 hrs (\$90,000 at \$150/hr), & a new OES category has been created & funded with the money removed from PM.	\$46,012.50	N/A
Additional Field Engineering Service, 45 Days	\$90,000.00	\$90,000.00	N/A	\$14,400.00	N/A
RF Exposure Measurements	\$21,050.00	\$20,000.00	N/A	N/A	N/A

Comprehensive coverage verification via field study, if needed	\$84,200.00	\$80,000.00	N/A	\$0.00	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	\$550.00	N/A
ASR modification (prepare FCC Form 854)	\$2,105.00	\$2,000.00	N/A	N/A	N/A
Environmental Assessment, if triggered by NEPA Section 106 review or for certain structures over 450 feet	\$10,520.00	\$10,000.00	N/A	N/A	N/A
NEPA Section 106 environmental review, if needed	\$6,310.00	\$6,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File request for Special Temporary Authorization	\$7,360.00	\$7,000.00	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	\$4,210.00	\$4,000.00	N/A	N/A	N/A
License					
Application					
Attorney Fees -	\$5,260.00	\$5,000.00	N/A	N/A	N/A
Prepare and					
File FCC Form					
2100 (main),					
Construction					
Permit					
Application					
Prepare	\$4,100.00	\$3,000.00	N/A	N/A	N/A
request for					
Special					
Temporary					
Authorization					
RF Consulting	\$1,580.00	\$1,500.00	N/A	N/A	N/A
Engineer Fees-					
Aux Antenna:					
Prepare					
engineering					
section of FCC					
Form 2100,					
License to					
Cover					
Application					
Prepare	\$1,580.00	\$1,500.00	N/A	N/A	N/A
engineering					
section of FCC					
Form 2100					
(main), License					
to Cover Application					

\$2,105.00	\$2,000.00 \$6,000.00	N/A \$3,000 for the 1% expansion	N/A \$6,000.00	N/A N/A
\$3,155.00	\$6,000.00	the 1% expansion	\$6,000.00	N/A
		initial 90-day CP application and \$3,000 for expansion facilities in the 1st priority filing window pursuant to DA 17-106 where costs reasonably incurred in the 1st priority window for expanded		
			the 1st priority filing window pursuant to DA 17-106 where costs reasonably incurred in the 1st priority window for	the 1st priority filing window pursuant to DA 17-106 where costs reasonably incurred in the 1st priority window for expanded facilities will be

Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$14,000.00	\$7,000 for the 1% expansion initial 90-day CP application and \$7,000 for expansion facilities in the 1st priority filing window pursuant to DA 17-106 where costs reasonably incurred in the 1st priority window for expanded facilities will be reimbursed.	\$14,000.00	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	\$5,505.90	Legal assistance beyond that originally anticipate has been required
Project management of the transition	\$94,800.00	\$187,500.00	N/A	\$26,449.25	N/A
Sub-total	\$452,925.00	\$546,250.00	N/A	\$112,917.65	N/A
Total for all	\$4,659,945.00	\$4,679,794.00	N/A	\$842,239.53	N/A

Actual Information Description	File Name	
Other Engineering Services		
	Component Description: Amount:	Inv 947-75 WSLS Actual Cost UL20180705jgv1 \$1,687.50
	Component Description:	Inv 947-88 WSLS OES Jan18 - Jun18
	Amount:	UL20180720jgv1 \$44,325.00

Additional Field Engineering Service, 45	Component Description:	Inv 947-49 WSLS
Days	Component Description:	CAS planning
		procurement and
		oversight; site visit
		UL20180412jg
	Amount:	\$5,400.00
	Component Description:	Inv: WSLS GatesA
		manufacturer visit
		UL20180316
	Amount:	\$1,800.00
	Component Description:	Inv: WSLS R&S
		manufacturer visit UL20180316
	Amount:	\$1,800.00
		. ,
	Component Description:	Additional Field
		Engineering
		Services (On Site
		Equipment
		inventory & facilitie
		survey) - Also see
		Attached "KGA
	Amount:	Quote" \$5,400.00
	Anount.	\$5,400.00
RF Exposure Measurements	Information not provided.	
Comprehensive coverage		
verification via field study, if needed	Component Description:	Partial Completion
		of Comprehensive
		coverage
		verification via field
		study - see "KGA
		Quote" for fixed
	Amount	price fee.
	Amount:	\$38,200.00

FAA consultant, cost of preparing Form 7460 (Not Proposed Const needed for heig	g FAA ice of truction), if	omponent Description: mount:	Inv 947-71 WSLS FAA 7460 UL20180531jgv1 \$550.00
ASR modificatio FCC Form 854)		formation not provided.	
Environmental Assessment, if t NEPA Section 1 or for certain str over 450 feet	riggered by 06 review	formation not provided.	
NEPA Section 1 environmental re needed		formation not provided.	
Attorney Fees - and File request Special Tempor Authorization	tfor	formation not provided.	
Attorney Fees -I and File FCC Fo (main), License Application	orm 2100	formation not provided.	
Attorney Fees - Antenna, prepar Form 2100 Cons Permit or Licens Application	re and File struction	formation not provided.	
Attorney Fees - and File FCC Fo (main), Construc Permit Application	orm 2100 ction	formation not provided.	
Prepare request Special Tempor Authorization		formation not provided.	
RF Consulting E Fees- Aux Anter Prepare engined section of FCC I License to Cove Application	nna: ering Form 2100,	formation 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	Component Description:	Engineering Portion of 1% Expansion CP application for Initial 90-Day Filing Window - Also see "KGA Quote".
	Amount:	\$3,000.00
	Component Description:	Expanded Facilities - Prepare engineering section of Form 301 FCC First Priority Filing Window CP Application to compensate for IX in excess of 1%. Reimbursable pursuant to DA 17- 106.

Perform engineering study for new channel assignment and antenna development	Component Description:	Expanded Facilities - Performed engineering studies for increased coverage and antenna development in 1st Priority Filing Window to compensate for IX in excess of 1%. Reimbursable pursuant to DA 17- 106.
	Amount:	\$7,000.00
	Component Description:	1% Expansion Engineering Studies and Coordination for Initial 90-CP application - Also see "KGA Quote".
	Amount:	\$7,000.00
Address transition timing and coordination issues w/ other stations and wireless	Information not provided.	

Prepare and or review reimbursement form	Common and Deceminations	Inv: WSLS
	Component Description:	Reimburse review etc UL20180305
	Amount:	\$513.00
	Component Description:	Inv: WSLS Various legal UL20180329 rev'd 20180329jg
	Amount:	\$1,197.90
	Component Description:	Inv: WSLS Various legal UL20180305
	Amount:	\$1,295.00
	Component Description:	Prepared FCC 399 reimbursement form (Initial Filing) - Also see attached
	Amount:	"KGA Quote" \$2,500.00

Project management of the transition	Component Description:	Inv 60768465 WSLS Various legal
	Amount:	UL20180514 jgv1 \$1,559.25
	Component Description:	Inv 947-65 WSLS Proj Mgt 2017 Aug - Dec
	Amount:	UL20180625jgv2 \$20,190.00
	Component Description:	Inv 947-81 WSLS 2018Q2 387
	Amount:	UL20180713jgv1 \$300.00
	Component Description:	Inv: WSLS 2017Q4 387 UL20180302 \$300.00
	Amount.	<i>\$</i> 000.00
	Component Description:	Project Management - Also see attached "KGA Quote" Hours: 23-1 /3 Rate: \$150/hr Time Period: 8/1/17 - 8/31/17
	Amount:	\$3,500.00
	Component Description:	Inv: WSLS 2017Q3 387 UL20180302
	Amount:	\$300.00
	Component Description:	Inv 947-57 WSLS 2018Q1 387 UL20180622jgv1
	Amount:	\$300.00

Other Expenses

Cost Information

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cos Justificatio
Other Expenses	\$195,190.00	\$194,585.00		\$0.00	
MVPD Notification of Channel Change	\$2,000.00	\$2,000.00	N/A	N/A	N/A
Develop and air announcement of upcoming channel change	\$100,000.00	\$100,000.00	It is expected that the station will spend at least \$100,000 developing and airing the required announcements.	N/A	N/A
Equipment Storage	\$10,000.00	\$10,000.00	N/A	N/A	N/A
Equipment Delivery and Handling Charges	\$50,000.00	\$50,000.00	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
Non-zoning permits	\$10,000.00	\$10,000.00	N/A	N/A	N/A

FCC Filing Fees - Form	\$335.00	\$325.00	A license application may	N/A	N/A
2100 license			be required		
to cover			after structural		
application			analysis results		
			are received		
			which would		
			require a CP		
			mod application		
			and then the		
			license		
			application.		
FCC Filing	\$1,110.00	\$1,070.00	A minor change	N/A	N/A
Fees - Form			of CP		
2100 minor			application may		
change CP			be required		
application			after structural		
			analysis results		
			are received.		
DTV Medical	\$11,550.00	\$11,000.00	N/A	N/A	N/A
Facility					
Notification					
FCC Filing	\$195.00	\$190.00	An STA will be	N/A	N/A
Fees - Special			required for		
Temporary			interim		
Authorization			operation while		
request			the main facility		
			is being built-		
			out.		
Sub-total	\$195,190.00	\$194,585.00	N/A	\$0.00	N/A
Total for all systems	\$4,659,945.00	\$4,679,794.00	N/A	\$842,239.53	N/A

Information not provided.

Cost Information	Grand Total			
		Predetermined Cost Estimate	Estimated Cost	Actual Cost
	Total for all systems	\$4,659,945.00	\$4,679,794.00	\$842,239.53

Reimbursem	envestiatus	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	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.	
		 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.

I declare, under penalty of perjury, that I am an authorized representative of the above- named applicant for the Authorization(s)Jeffrey C Gehmanspecified above.Gehman Engineering Associate	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.	
07/26/2018	an authorized representative of the above- named applicant for the Authorization(s)	Gehman Engineering Associate

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).	
		 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).
- 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. 	
ar na	declare, under penalty of perjury, that I am n authorized representative of the above- amed applicant for the Authorization(s) pecified above.	Jeffrey C Gehman Engineering Associate
		07/26/2018

Attachments