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: **6104** | Service: **DTV** | Call Sign: **WKAR-TV** | Channel: **33 (UHF)**

File Number: **0000027896**

FRN: **0007619026** | Date Submitted: **08/31/2018**

Applicant Information

Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
BOARD OF TRUSTEES, MICHIGAN STATE UNIVERSITY Doing Business As: BOARD OF TRUSTEES, MICHIGAN STATE UNIVERSITY	Susanne Elkins, Director of Broadcasting WKAR-AM/FM/TV 404 WILSON RD, ROOM 212 EAST LANSING, MI 48824 United States	+1 (517) 884-4700	susi@wkar.org	Private Not-for-Profit Educational Institution

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
Gary Blievernicht *Chief Engineer* *WKAR - TV Michigan State University*	Gary Blievernicht 404 Wilson Road Room 212 East Lansing, MI 48824 United States	+1 (517) 884-4720	garyb@wkar.org

Broadcaster Information and Transition Plan

Question	Response
Will the station be sharing equipment with another broadcast television station or stations (e.g., a shared antenna, co-location on a tower, use of the same transmitter room, multiple transmitters feeding a combiner, etc.)? If yes, enter the facility ID's of the other stations and click 'prefill' to download those stations' licensing information.	No
Briefly describe transition plan	Replacement of the licensed main antenna, licensed auxiliary antenna, the 6" transmission line to the main antenna, the mask filter and the transmitters to complete reassignment from UHF channel 40 to channel 33 in phase 7 of channel repack.

Transmitters

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

Auxiliary Transmitter

Add Transmitter Information

Section	Question	Response
Existing Transmitter Description	Type of change	Purchase New
	Use	Auxiliary (Backup)
	Description of Use	Auxiliary /Backup transmitter
	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	CSTII
	Year	1997
	Type	Inductive Output Tube
	IOT Power Type	Single
	Power Capacity	30 kW

Auxiliary Transmitter

New Transmitter Costs

Section	Question	Response
New Transmitter	Use	Auxiliary (Backup)
	Change Type	Purchase New
	Is this a request for upgraded equipment?	Yes
	Manufacturer	
	Model	THU9EVO /THU9/THV9
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	20 kW
	Justification for New Transmitter	The present WKAR transmitter is a 30 kW, ABS CST II IOT transmitter with dual exciters. The transmitter manufacturer no longer exists and available parts are in limited supply. No mainstream manufacturer will support its conversion to a new channel.

Auxiliary Transmitter

Other Transmitter Costs

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	Yes
	Switchgear (industrial 800 amp)	No
	Transformer (480V)	No
	Power	N/A
	Rigid Conduit and Wiring	No
	Size	N/A
	Length	N/A
	Other Electrical Service	No
	Description	N/A
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	Type	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Auxiliary Transmitter

Other Transmitter Cost Not Listed

Information not provided.

Primary Transmitter

Existing Transmitter Information

Section	Question	Response
Existing Transmitter Description	Type of change	Purchase New
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmitter currently shared with another station?	No
	Is this transmitter currently in operating condition?	Yes
Existing Transmitter Manufacturer and Type	Manufacturer	
	Model	CST II
	Year	1997
	Type	Inductive Output Tube
	IOT Power Type	Single
	Power Capacity	30 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	THU9EVO /THU9/THV9
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	20 kW
	Justification for New Transmitter	The present WKAR transmitter is a 30 kW, ABS CST II IOT transmitter with dual exciters. The transmitter manufacturer no longer exists and available parts are in limited supply. No mainstream manufacturer will support its conversion to a new channel.

Primary Transmitter

Other Transmitter Costs

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	Yes
	Switchgear (industrial 800 amp)	No
	Transformer (480V)	No
	Power	N/A
	Rigid Conduit and Wiring	No
	Size	N/A
	Length	N/A
	Other Electrical Service	No
	Description	N/A
HVAC Service	Does the replacement transmitter require HVAC Service?	No
	Type	N/A
	Size	N/A
	Other Size	N/A
Transmitter Building Addition/Modification or Leasehold Improvement	Does the Transmitter Building require an addition, modification, other leashold improvement?	No
	Size	N/A
Channel 14 Costs	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

Primary Transmitter

Other Transmitter Cost Not Listed

Information not provided.

Antennas

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

Auxiliary Antenna

Existing Antenna Information

Section	Question	Response
Existing Antenna Description	Type of change	Purchase New
	Antenna Use	Auxiliary (Backup)
	Description of Use	Auxiliary /Backup
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing antenna shared with another station or stations?	No
	Is the existing antenna directional?	Yes
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	Side Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	Broadband Panel
	Number of Stations Supported	1
	Number of Panels	8
	Design power capacity in use	30.0 %
	Lower Limit	470.00 MHz
	Upper Limit	692.00 MHz
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	75.0 kW

Manufacturer	
Model	1230ECW-8-23
Year	2018

Auxiliary Antenna

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Auxiliary (Backup)
	Description of Use	Auxiliary /Backup
	Change Type	Purchase New
	Is this a request for upgraded equipment?	Yes
	Ownership	Owned
	Owner	N/A
	Is antenna shared?	No
	Is antenna directional?	Yes
	Will antenna be located on or in close proximity to an antenna farm?	No
New Antenna Manufacturer and Types	Class	Full Power
	Mounting	Side Mount
	Antenna position in stack	Not in Stack
	Polarization	Horizontal
	Type	Broadband Slot
	Number of Stations Supported	1
	Number of Panels/Bays	16
	Lower Limit	518.00 MHz
	Upper Limit	608.00 MHz
	Design power capacity in use	90.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	90.0 kW
	Manufacturer	

Model	ATC-BCE414OM-33
Year	2019
Justification for New Antenna	Existing licensed antenna was designed and constructed for single channel, 40, operation.

Auxiliary Antenna

Other Antenna Costs

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

Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Auxiliary Antenna

Other Antenna Cost Not Listed

Information not provided.

Primary Antenna

Existing Antenna Information

Section	Question	Response
Existing Antenna Description	Type of change	Purchase New
	Antenna Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing antenna shared with another station or stations?	No
	Is the existing antenna directional?	Yes
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	Slotted Coaxial
	Number of Stations Supported	N/A
	Number of Panels	N/A
	Design power capacity in use	N/A
	Lower Limit	N/A
	Upper Limit	N/A
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	375.0 kW

Manufacturer	
Model	ATW19HS4-ETC170-33H
Year	2018

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?	No
New Antenna Manufacturer and Types	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	Slotted Coaxial
	Number of Stations Supported	N/A
	Number of Panels/Bays	N/A
	Lower Limit	N/A
	Upper Limit	N/A
	Design power capacity in use	N/A
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	375.0 kW
	Manufacturer	

	Model	ATC-BCE322C1-V1-33
	Year	2019
	Justification for New Antenna	Current antenna was designed and constructed for single channel, 40, operation.

Primary Antenna

Other Antenna Costs

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	No
	Type	
	Number of channels supported	N/A
	Frequencies of channels supported	N/A
	Frequency	N/A
	Do you need a combiner output splitter /switcher for dual feed lines?	N/A
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	Yes
	Broadband or Single Channel?	Broadband
	Feed Line Size	6 1/8 inches inches
Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	No

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

Primary Antenna

Other Antenna Cost Not Listed

Information not provided.

Transmission Line

Section	Question	Response
Transmission Line Related Expenses	Do you have transmission line related expenses?	Yes

Auxiliary Transmission Line

Existing Transmission Line

Section	Question	Response
Existing Transmission Line Description	Type of change	Utilize Existing
	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?	No
	Is Transmission Line in operating condition?	Yes
Existing Transmission Line Manufacturer and Type	Manufacturer	Andrew
	Type	Flexible Foam
	Diameter	Other
	Other Diameter	3 inches
	Segment Length	N/A
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	580 feet per run

Auxiliary Transmission Line

Other Transmission Line Expenses Not Listed

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	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	1050 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?	Yes
	Type	Rigid
	Diameter	6 1/8 inches
	Other Diameter	N/A
	Segment Length	Broadband
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	1050 feet per run
	Justification for New Transmission Line	Current line is in 20' segment lengths which are prohibited for use on Ch.33

Primary Transmission Line

Other Transmission Line Expenses Not Listed

Information not provided.

Tower Equipment And Rigging Costs

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

Primary Tower

Existing Tower

Section	Question	Response
Existing Tower Description	Type of change	Modify Existing
	Tower Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Is this tower consider Complex?	No
	Is this tower currently shared with any other stations?	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?	Yes
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1265362
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	42° 42' 06.9" N-
	Longitude (NAD83)	084° 24' 47.8" W-
	Overall Structure Height	1027.87 feet
	Support Structure Height	977.02 feet
	Ground Elevation Above Mean Sea Level (AMSL)	850.06 feet

Structure Type	TOWER - Free Standing or Guyed Structure
Tower Owner	Board of Trustees, Michigan State University
Date Constructed	07/05/2011

Primary Tower

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:	Minor Reinforcements needed

Primary Tower

Tower Rigging Costs

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

Primary Tower

Other Tower Expenses Not Listed

Information not provided.

Outside Professional Services Costs

Section	Question	Response
Outside Project Management Services	Do you require outside project management services?	Yes
	Number of Hours	400
	Explanation	WKAR-TV is a relatively small public television station and has an engineering staff of three people, responsible for the studio and transmitter operations and maintenance, and the maintenance of the WKAR-AM, WKAR-FM, and co-owned W233CH and WDBM-FM trans
Outside RF consulting Engineering Services	Perform engineering study for new channel assignment and antenna development	Yes
	Prepare engineering section of Form FCC Construction Permit Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare engineering section of Form FCC License to Cover Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes

	Prepare request for Special Temporary Authority	Yes
	Quantity	1
	Do you have Distributed Transmission System engineering services?	N/A
	Critical Facility	N/A
	Terrain-Shielded Facility	N/A
Attorney and Other Outside Consulting Services	Prepare and file Form FCC Construction Permit Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare and file Form FCC License to Cover Application	Yes
	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	1
	NEPA Section 106 environmental review	No
	Environmental Assessment	No
	ASR Modification	Yes
	FAA Consultation (including preparation of FAA Form 7460)	Yes
	Negotiation of Lease and other Matter for Shared Locations	No
	Prepare or Review FCC Form 399 for Reimbursement	Yes
	Address transition timing and coordination issues w/ other stations and wireless providers	No
RF Field Engineering Services	Comprehensive coverage verification via field study	No

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

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	No
	FCC Special Temporary Authority Application	No
Other Miscellaneous Expenses	Does this relocation require paying Disposal Costs (for equipment and other waste, net of any salvage value)?	Yes
	Does this relocation require Equipment Delivery or Handling Charges not otherwise included in individual item costs?	Yes
	Does this relocation require Equipment Storage?	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
Staff Time	Administrative Staff Time for requisitions, payments and reimbursement related to repack
Staff Time	Engineering Staff time related to repack
Security Services	On-site security to protect transmission line and antenna from theft or damage after delivery and prior to installation.

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 THU9EVO /THU9/THV9	**$698,400.00**	**$663,700.00**		**$514,822.50**	
UHF - Liquid Cooled Solid State Transmitter 14.2 - 20 kW	$684,000.00	$650,000.00	N/A	$514,822.50	Reimbursement for purchase of new Main transmitter
Service entrance 3 phase/800 amp/208 volt	$14,400.00	$13,700.00	N/A	N/A	N/A
Auxiliary Transmitter THU9EVO /THU9/THV9	**$698,400.00**	**$663,700.00**		**$514,822.50**	
UHF - Liquid Cooled Solid State Transmitter 14.2 - 20 kW	$684,000.00	$650,000.00	N/A	$514,822.50	Reimbursement for purchase of new Auxiliary transmitter
Service entrance 3 phase/800 amp/208 volt	$14,400.00	$13,700.00	N/A	N/A	N/A
Sub-total	$1,396,800.00	$1,327,400.00	N/A	$1,029,645.00	N/A

Total for all systems	$2,659,857.00	$2,398,712.00	N/A	$1,509,675.84	N/A

Components

Actual Information Description	File Name

UHF - Liquid Cooled Solid State Transmitter 14.2 - 20 kW	**Component Description:**	System, WKAR PRLX U12 D33 QOS-1000RT Precision Monitoring System Delivery Disposal of Packaging Spare Parts Option Spare Power Supplies Spare Power Amplifier
	Amount:	$180,187.87
	Component Description:	System, WKAR PRLX U12 D33 QOS01000RT Precision Monitoring System, Delivery, Disposal of Packaging, Spare Parts Option, Spare Power Supplies and Spare Power Amplifier
	Amount:	$308,893.50
	Component Description:	System, WKAR PRLX U12 D33 QOS-1000RT Precision Monitoring System Delivery Disposal of Packaging Spare Parts Option Spare Power Supplies Spare Power Amplifier
	Amount:	$25,741.13
Service entrance 3 phase /800 amp/208 volt	Information not provided.	

UHF - Liquid Cooled Solid State Transmitter 14.2 - 20 kW	**Component Description:**	System, WKAR PRLX U12 D33 QOS-1000RT Precision Monitoring System Delivery Disposal of Packaging Spare Parts Options Spare Power Supplies Spare Power Amplifier
	Amount:	$180,187.88
	Component Description:	System, WKAR PRLX U12 D33 QOS-1000RT Precision Monitoring System Delivery Disposal of Packaging Spare Parts Options Spare Power Supplies Spare Power Amplifier
	Amount:	$308,893.50
	Component Description:	System, WKAR PRLX U12 D33 QOS-1000RT Precision Monitoring System Delivery Disposal of Packaging Spare Parts Options Spare Power Supplies Spare Power Amplifier
	Amount:	$25,741.12
Service entrance 3 phase /800 amp/208 volt	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
Primary Antenna ATC-BCE322C1-V1-33	**$309,930.00**	**$294,400.00**		**$161,028.00**	
Elbow complex, broadband, at antenna input, per 6 1/8. feedline (if needed)	$13,700.00	$13,000.00	N/A	N/A	N/A
Sweep test of existing antenna	$6,730.00	$6,400.00	N/A	N/A	N/A
UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	$289,500.00	$275,000.00	N/A	$161,028.00	N/A
Auxiliary Antenna ATC-BCE414OM-33	**$119,280.00**	**$115,950.00**		**$77,315.90**	

Side mount brackets for high power antennas (if not included in antenna base cost)	$23,150.00	$22,550.00	N/A	N/A	N/A
UHF - Lower Power Side Mount, One station antenna - medium power (50-200 kW), horizontally polarized	$89,400.00	$87,000.00	N/A	$77,315.90	N/A
Sweep test of existing antenna	$6,730.00	$6,400.00	N/A	N/A	N/A
Sub-total	$429,210.00	$410,350.00	N/A	$238,343.90	N/A
Total for all systems	$2,659,857.00	$2,398,712.00	N/A	$1,509,675.84	N/A

Components

Actual Information Description	File Name
Elbow complex, broadband, at antenna input, per 6 1/8. feedline (if needed)	Information not provided.
Sweep test of existing antenna	Information not provided.

UHF - High Power Top Mount (200-1000 kW), One station antenna , elliptically or circularly polarized	**Component Description:** **Amount:**	Channel 33 Antenna, C-170 Pattern, W/Flash beacon & lightening protector, radome, h & v 25% polarity $161,028.00
Side mount brackets for high power antennas (if not included in antenna base cost)	Information not provided.	
UHF - Lower Power Side Mount, One station antenna - medium power (50-200 kW), horizontally polarized	**Component Description:** **Amount:** **Component Description:** **Amount:**	Auxiliary antenna and freight for auxiliary antenna $73,165.90 Installation service required to move FM antenna to make room for TV auxiliary antenna. $4,150.00
Sweep test of existing antenna	Information not provided.	

Cost Information

Transmission Line

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Primary Transmission Line	**$243,600.00**	**$232,050.00**		**$190,132.94**	
Rigid Transmission Line - copper, 6 1/8" broadband	$243,600.00	$232,050.00	N/A	$190,132.94	N/A
Auxiliary Transmission Line	**$0.00**	**$0.00**		**$0.00**	
Sub-total	$243,600.00	$232,050.00	N/A	$190,132.94	N/A
Total for all systems	$2,659,857.00	$2,398,712.00	N/A	$1,509,675.84	N/A

Components

Actual Information Description	File Name

Rigid Transmission Line - copper, 6 1/8" broadband	**Component Description:**	Transmission line components to connect mask filter to main antenna switch.
	Amount:	$10,870.74
	Component Description:	Transmission line, 6-1/8" 75 OHM, wideband (UHF Channels 14-40) Apprx. 1090' elbows, elbow complex, gas barriers, horizontal & vertical hangers, test adapters, variable matching networks
	Amount:	$179,262.20

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	**$381,100.00**	**$227,000.00**		**$28,865.00**	
Structural engineering tower load study for well documented tower	$12,600.00	$12,000.00	N/A	$4,165.00	N/A
Minor tower reinforcement /modifications	$158,000.00	$15,000.00	N/A	N/A	N/A
Tall Tower (greater than 500')	$210,500.00	$200,000.00	N/A	$24,700.00	N/A
Sub-total	$381,100.00	$227,000.00	N/A	$28,865.00	N/A
Total for all systems	$2,659,857.00	$2,398,712.00	N/A	$1,509,675.84	N/A

Components

Actual Information Description	File Name

Structural engineering tower load study for well documented tower	**Component Description:** **Amount:** **Component Description:** **Amount:**	Structural engineering tower load study $2,480.00 Structural engineering tower load study $1,685.00
Minor tower reinforcement /modifications	Information not provided.	
Tall Tower (greater than 500')	**Component Description:** **Amount:** **Component Description:** **Amount:** **Component Description:** **Amount:**	Weather delay charges for crew waiting to work on tower due to rain /thunderstorm and /or high winds. $9,100.00 Weather delay charges for crew waiting to work on tower due to rain /thunderstorm and /or high winds. $2,600.00 Security service to keep the antennas and transmission line safe for vandalism or theft during overnight hours and weekends. $2,548.00

Component Description:	Security service to keep the antennas and transmission line safe for vandalism or theft during overnight hours and weekends.
Amount:	$1,253.00
Component Description:	Weather delay charges for crew waiting to work on tower due to rain /thunderstorm and /or high winds.
Amount:	$13,000.00
Component Description:	Security service to keep the antennas and transmission line safe for vandalism or theft during overnight hours and weekends.
Amount:	$2,548.00
Component Description:	Security service to keep the antennas and transmission line safe for vandalism or theft during overnight hours and weekends.
Amount:	$2,548.00

Component Description:	Security service to keep the antennas and transmission line safe for vandalism or theft during overnight hours and weekends.
Amount:	$2,352.00
Component Description:	Security service to keep the antennas and transmission line safe for vandalism or theft during overnight hours and weekends.
Amount:	$2,555.00

Cost Information

Outside Professional Services

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Outside Professional Services	**$124,435.00**	**$117,750.00**		**$4,000.00**	
FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase	$2,105.00	$2,000.00	N/A	N/A	N/A
ASR modification (prepare FCC Form 854)	$2,105.00	$2,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File request for Special Temporary Authorization	$3,680.00	$3,500.00	N/A	N/A	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application	$2,365.00	$2,250.00	N/A	N/A	N/A

Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	$4,210.00	$4,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	$5,260.00	$5,000.00	N/A	N/A	N/A
Prepare request for Special Temporary Authorization	$2,050.00	$1,500.00	N/A	$150.00	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
Perform engineering study for new channel assignment and antenna development	$7,360.00	$7,000.00	N/A	$2,725.00	N/A
Project management of the transition	$63,200.00	$60,000.00	N/A	N/A	N/A
Prepare and or review reimbursement form	$2,630.00	$2,500.00	N/A	$150.00	N/A
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	$3,155.00	$3,000.00	N/A	$975.00	N/A
RF Exposure Measurements	$21,050.00	$20,000.00	N/A	N/A	N/A
Sub-total	$124,435.00	$117,750.00	N/A	$4,000.00	N/A
Total for all systems	$2,659,857.00	$2,398,712.00	N/A	$1,509,675.84	N/A

Components

Actual Information Description	File Name

FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase	Information not provided.
ASR modification (prepare FCC Form 854)	Information not provided.
Attorney Fees - Prepare and File request for Special Temporary Authorization	Information not provided.
Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application	Information not provided.
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	Information not provided.
Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	Information not provided.
Prepare request for Special Temporary Authorization	**Component Description:** Analysis of WKAR move to Early Phase of repack **Amount:** $150.00
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.
Perform engineering study for new channel assignment and antenna development	**Component Description:** components of engineering studies and maps for guidance for new antenna patterns **Amount:** $475.00 **Component Description:** components of engineering studies and maps for guidance for new antenna patterns **Amount:** $1,425.00 **Component Description:** .5 hour of perform engineering study for new channel assignment and antenna development **Amount:** $75.00 **Component Description:** Prepare engineering study for new channel assignment and antenna development- 5 hours **Amount:** $750.00
Project management of the transition	Information not provided.

Prepare and or review reimbursement form	**Component Description:** **Amount:**	1.0 hour for prepare and review reimbursement form 399 $150.00
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	**Component Description:** **Amount:**	6.5 hours for preparation of engineering section of FCC Form 2100 (main), Construction Application Permit $975.00
RF Exposure Measurements	Information not provided.	

Cost Information

Other Expenses

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
Other Expenses	**$84,712.00**	**$84,162.00**		**$18,689.00**	
Security Services	***$14,000.00***	$14,000.00	N/A	$13,804.00	N/A
Staff Time	***$20,500.00***	$20,500.00	N/A	N/A	N/A
MVPD Notification of Channel Change	***$100.00***	$100.00	N/A	N/A	N/A
Develop and air announcement of upcoming channel change	***$100.00***	$100.00	N/A	N/A	N/A
Equipment Storage	***$1,000.00***	$1,000.00	N/A	N/A	N/A
DTV Medical Facility Notification	$11,550.00	$11,000.00	N/A	$4,885.00	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	***$31,462.00***	$31,462.00	N/A	N/A	N/A
Equipment Delivery and Handling Charges	***$5,000.00***	$5,000.00	N/A	N/A	N/A
Non-zoning permits	***$1,000.00***	$1,000.00	N/A	N/A	N/A

Sub-total	$84,712.00	$84,162.00	N/A	$18,689.00	N/A
Total for all systems	$2,659,857.00	$2,398,712.00	N/A	$1,509,675.84	N/A

Components

Actual Information Description	File Name	
Security Services		
	Component Description:	Provide security to protect transmission line and antenna from theft of vandalism nights and weekends prior to installation
	Amount:	$2,548.00
	Component Description:	Provide security to protect transmission line and antenna from theft of vandalism nights and weekends prior to installation
	Amount:	$2,555.00
	Component Description:	Provide security to protect transmission line and antenna from theft of vandalism nights and weekends prior to installation
	Amount:	$2,548.00

	Component Description: **Amount:**	Provide security to protect transmission line and antenna from theft of vandalism nights and weekends prior to installation $2,352.00
	Component Description: **Amount:**	Security Service to protect transmission line and antenna from theft or vandalism at night & weekends prior to installation. $1,253.00
	Component Description: **Amount:**	Provide security to protect transmission line and antenna from theft of vandalism nights and weekends prior to installation $2,548.00
Staff Time	Information not provided.	
MVPD Notification of Channel Change	Information not provided.	
Develop and air announcement of upcoming channel change	Information not provided.	
Equipment Storage	Information not provided.	

DTV Medical Facility Notification	**Component Description:** **Amount:**	Notification to medical facilities $4,885.00
Disposal Costs (for equipment and other waste, net of any salvage value)	Information not provided.	
Equipment Delivery and Handling Charges	Information not provided.	
Non-zoning permits	Information not provided.	

Cost Information

Grand Total

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	$2,659,857.00	$2,398,712.00	$1,509,675.84

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	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.	**Stephanie A DeClercq** *Fiscal Officer* 08/31/2018

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.	**Stephanie A DeClercq** *Fiscal Officer* 08/31/2018

Attachments