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: **50147** | Service: **DTV** | Call Sign: **WOUB-TV** | Channel: **32 (UHF)**

File Number: **0000028541**

FRN: **0005012729** | Date Submitted: **07/12/2017**

Applicant Information

Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
OHIO UNIVERSITY Doing Business As: OHIO UNIVERSITY	WOUB PUBLIC MEDIA 9 SOUTH COLLEGE STREET ATHENS, OH 45701 United States	+1 (740) 593-4927	SKIDMORE@OHIO.EDU	Government Entity

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
Steve Skidmore *Chief Technology Officer* *Ohio University / WOUB Public Media*	Steve Skidmore WOUB Public Media 9 South College Street RM 395F Athens, OH 45701 United States	+1 (740) 593-4927	skidmore@ohio.edu

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	See Attachment "Exhibit A1 WOUB Transition Plan"

Transmitters

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

Primary Transmitter

Existing Transmitter Information

Section	Question	Response
Existing Transmitter Description	Type of change	Purchase New
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmitter currently shared with another station?	No
	Is this transmitter currently in operating condition?	Yes
Existing Transmitter Manufacturer and Type	Manufacturer	
	Model	ADC Visionary DT HP50SAW
	Year	2001
	Type	Inductive Output Tube
	IOT Power Type	Single
	Power Capacity	28 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	THU9-20 EVO 31kW
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	31 kW
	Justification for New Transmitter	Existing 2001 ADC Visionary is no longer supported. The original manufacturer is out of business and there are no parts or factory services available. It is a single tube transmitter and must stay on air during the transition to support current Channel.

Primary Transmitter

Other Transmitter Costs

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	No
	Switchgear (industrial 800 amp)	No
	Transformer (480V)	Yes
	Power	300 kVA
	Rigid Conduit and Wiring	Yes
	Size	2 inches
	Length	150.0 feet
	Other Electrical Service	Yes
	Description	it will require new 220/110 service for the heat exchanger system, and support equipment.
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

Name	Description
Structural Reinforcement	The transmitter will be placed on a second story wooden floor. It will require some structural reinforcement to support the weight of the transmitter.

Antennas

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

Primary Antenna

Existing Antenna Information

Section	Question	Response
Existing Antenna Description	Type of change	Retune Existing
	Antenna Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing antenna shared with another station or stations?	No
	Is the existing antenna directional?	No
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	No
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	Top Mount
	Antenna position in stack	Not in Stack
	Polarization	Horizontal
	Type	Broadband Panel
	Number of Stations Supported	1
	Number of Panels	40
	Design power capacity in use	34.0 %
	Lower Limit	470.00 MHz

Upper Limit	860.00 MHz
Other Antenna Type	N/A
ERP: (Effective Radiated Power)	250.0 kW
Manufacturer	Dielectric
Model	TUF-04-10 /40H-SP-1-T
Year	2001

Primary Antenna

Adjustment to Existing Antenna

Section	Question	Response
Sweep Test of Existing Antenna	Do you need a sweep test of existing antenna?	Yes

Primary Antenna

Other Antenna Costs

Section	Question	Response
Combiner for Shared Antenna	Do you need a Combiner for a Shared Antenna?	Yes
	Type	New
	Number of channels supported	2
	Frequencies of channels supported	RF channel
	Frequency	N/A

Enter a list of RF channel numbers.

RF Channel Number
27
32

Primary Antenna

Other Antenna Cost Not Listed

Name	Description
Transition	61/8 coaxial transition to waveguide to connect to existing waveguide switch
Four Coaxial Elbows	61/8 elbows to connect combiner to Wave Guide switch.
Station Load	Must install a station load to conduct testing of the transmitter before on air transition.

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
Existing Transmission Line Description	Type of change	Utilize Existing
	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	Dielectrict
	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	910 feet per run

Primary Transmission Line

Other Transmission Line Expenses Not Listed

Name	Description
Hanger Replacement	The existing line can be turned and used for the new channel but due to the age it will require replacement of hangers to assure reliable continued service.

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?	No
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1041734
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	39° 18' 52.0" N-
	Longitude (NAD83)	082° 08' 59.0" W-
	Overall Structure Height	859.57 feet
	Support Structure Height	820.53 feet
	Ground Elevation Above Mean Sea Level (AMSL)	784.77 feet

Structure Type	TOWER - Free Standing or Guyed Structure
Tower Owner	OHIO UNIVERSITY TELECOM CENTER DBA = WOUB-FM /TV
Date Constructed	01/01/1978

Primary Tower

Tower Modification Costs

Section	Question	Response
Engineering Study	Please what type of engineering study is required, if any:	No study needed
Tower Reinforcements	Please select whether tower reinforcements are needed:	No 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

Name	Description

Atenna and Transmission Line Tunning	WOUB plans to utilize the existing Dielectric antenna and the feed line to minimize costs. This will require physical inspection of antenna and feed line on the tower and will require tower rigging to accomplish the inspection and tuning.

Outside Professional Services Costs

Section	Question	Response
Outside Project Management Services	Do you require outside project management services?	Yes
	Number of Hours	100
	Explanation	University public TV station requires additional project management support for repack work.
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	No
	For Main Facility	Yes
	Prepare engineering section of Form FCC License to Cover Application	Yes
	For Auxiliary Facility	No
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	No
	Quantity	N/A
	Do you have Distributed Transmission System engineering services?	N/A
	Critical Facility	N/A
	Terrain-Shielded Facility	N/A
Attorney and Other Outside Consulting Services	Prepare and file Form FCC Construction Permit Application	Yes
	For Auxiliary Facility	No
	For Main Facility	Yes

	Prepare and file Form FCC License to Cover Application	Yes
	For Auxiliary Facility	No
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	Yes
	Quantity	1
	NEPA Section 106 environmental review	No
	Environmental Assessment	No
	ASR Modification	No
	FAA Consultation (including preparation of FAA Form 7460)	No
	Negotiation of Lease and other Matter for Shared Locations	No
	Prepare or Review FCC Form 399 for Reimbursement	Yes
	Address transition timing and coordination issues w/ other stations and wireless providers	Yes
RF Field Engineering Services	Comprehensive coverage verification via field study	Yes
	RF exposure measurements	No
	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
Site Survey	Site survey will determine actual site conditions and determine the materials and components required for system installation /integration for the WOUB site.

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?	No
	Does this relocation require the Development and Airing of an Announcement regarding an upcoming channel change?	Yes
	Does this relocation require MVPD Notification of a Channel Change?	Yes

Other Expenses

Other Expenses Not Listed

Name	Description
Additional Legal Expenses	Additional legal expenses for small market, University licensee public TV station
Quarterly Progress Reports	FCC-required quarterly progress reports for repacked station

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 THU9-20 EVO 31kW	**$1,012,700.00**	**$963,750.00**		**$0.00**	
Transformer 3 phase/480v - 300 KVA	$36,800.00	$35,000.00	N/A	N/A	N/A
2" Rigid Conduit and Wiring (Cost per foot)	$3,900.00	$3,750.00	N/A	N/A	N/A
UHF - Liquid Cooled Solid State Transmitter 21 - 31 kW	$947,000.00	$900,000.00	N/A	N/A	N/A
Other Electrical Service: it will require new 220/110 service for the heat exchanger system, and support equipment.	***$20,000.00***	$20,000.00	Additional electrical expenses will be determined after the final transmitter manufacturer is determined and a site analysis is conducted.	N/A	N/A

Structural Reinforcement	***$5,000.00***	$5,000.00	To utilize existing building it will be necessary to reinforce the existing floor to support the weight of the new transmitter. This expense is cost effective compared to adding an addition to the existing building.	N/A	N/A
Sub-total	$1,012,700.00	$963,750.00	N/A	$0.00	N/A
Total for all systems	$1,820,964.00	$1,295,524.00	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
Primary Antenna TUF-04-10/40H-SP-1-T	**$372,322.00**	**$120,792.00**		**$0.00**	
Sweep test of existing antenna	$6,730.00	$6,400.00	N/A	N/A	N/A
New combiner, cost per channel (without antenna)	$84,200.00	$80,000.00	N/A	N/A	N/A
Transition	***$1,500.00***	$1,500.00	Direct quote from ERI, Attachment A3	N/A	N/A
Four Coaxial Elbows	***$5,168.00***	$5,168.00	Direct Quote from ERI, INC, Attachment A2	N/A	N/A
Station Load	***$27,724.00***	$27,724.00	The new transmitter must be tested off-air before the official testing period begins. A station load is required to do this testing.	N/A	N/A

UHF - High Power Top Mount (200-1000 kW), One station antenna, horizontally polarized	$247,000.00	$0.00	N/A	N/A	N/A
Sub-total	$372,322.00	$120,792.00	N/A	$0.00	N/A
Total for all systems	$1,820,964.00	$1,295,524.00	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
Primary Transmission Line	**$15,000.00**	**$15,000.00**		**$0.00**	
Hanger Replacement	***$15,000.00***	$15,000.00	Existing feed-line was installed in 2001. Replacing the hangers will be far less expensive than replacing the entire feed-line.	N/A	N/A
Sub-total	$15,000.00	$15,000.00	N/A	$0.00	N/A
Total for all systems	$1,820,964.00	$1,295,524.00	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
Primary Tower TOWER	**$230,500.00**	**$20,000.00**		**$0.00**	
Tall Tower (greater than 500')	$210,500.00	$0.00	We are not building a new tower. The LMS system automatically added in a cost for a new antenna. I spoke with Raphael Sznajder and Cindy Cavell who said to submit it this way.	N/A	N/A

Atenna and Transmission Line Tunning	***$20,000.00***	$20,000.00	Utilizing the existing system will be cost effective compared to installing a new feed line and antenna. The system was initially optimized for Channels 20 and 27. it needs to be optimized for channel 32 as assigned in the repack.	N/A	N/A
Sub-total	$230,500.00	$20,000.00	N/A	$0.00	N/A
Total for all systems	$1,820,964.00	$1,295,524.00	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
Outside Professional Services	**$145,892.00**	**$139,482.00**		**$0.00**	
Project management of the transition	$15,800.00	$15,000.00	University licensed public TV station requires additional project management support for repack transition.	N/A	N/A
Attorney Fees - Prepare and File request for Special Temporary Authorization	$3,680.00	$3,500.00	WOUB may need to operate one of the transmitters at a reduced power during the transition /testing phase. Theoretically the existing RF system will support both channels 27 and 32 at full power. This is a precautionary request.	N/A	N/A

Comprehensive coverage verification via field study, if needed	$84,200.00	$80,000.00	N/A	N/A	N/A
Prepare and or review reimbursement form	$2,630.00	$2,500.00	N/A	N/A	N/A
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
Site Survey	***$17,232.00***	$17,232.00	Quote Attached: Exhibit A5	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
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	$1,580.00	$1,500.00	N/A	N/A	N/A

Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	$5,260.00	$5,000.00	N/A	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
Sub-total	$145,892.00	$139,482.00	N/A	$0.00	N/A
Total for all systems	$1,820,964.00	$1,295,524.00	N/A	$0.00	N/A

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
Other Expenses	**$44,550.00**	**$36,500.00**		**$0.00**	
Equipment Delivery and Handling Charges	***$10,000.00***	$10,000.00	N/A	N/A	N/A
Develop and air announcement of upcoming channel change	***$3,000.00***	$3,000.00	Conceptional development, CG and video development, and production of 3 60 second spots.	N/A	N/A
MVPD Notification of Channel Change	***$1,500.00***	$1,500.00	Actual estimate from Joe Davis of Chesapeake RF Consultants. Attached Exhibit A4.	N/A	N/A
DTV Medical Facility Notification	$11,550.00	$3,500.00	Actual estimate from Joe Davis of Chesapeake RF Consultants. Attached Exhibit A4	N/A	N/A

Disposal Costs (for equipment and other waste, net of any salvage value)	***$3,000.00***	$3,000.00	Estimate for local refuse removal.	N/A	N/A
Additional Legal Expenses	***$10,000.00***	$10,000.00	Additional legal expenses to advise and support small market University-licensed public TV station with repack transition.	N/A	N/A
Quarterly Progress Reports	***$5,000.00***	$5,000.00	Assistance with preparation and filing of FCC-required quarterly status reports for repack transition.	N/A	N/A
Non-zoning permits	***$500.00***	$500.00	State required electrical permits.	N/A	N/A
Sub-total	$44,550.00	$36,500.00	N/A	$0.00	N/A
Total for all systems	$1,820,964.00	$1,295,524.00	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	$1,820,964.00	$1,295,524.00	$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	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.	**Stephen Skidmore** *Chief Technology Officer* 07/12/2017

Attachments