



(REFERENCE COPY - Not for submission)

# FCC Form 399: Reimbursement Request

Facility **71428** | Service: **DTV** | Call **WCIU-TV** | Channel: **23 (UHF)** |  
ID: | Sign:  
File **0000028286**  
Number:  
FRN: **0009562265** | Date **07/12**  
Submitted: **/2017**

## Applicant Information

### Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
<b>WCIU-TV LIMITED PARTNERSHIP</b>	Norman Shapiro	+1 (312) 705-2600	NSHAPIRO@wciu.com	Limited Partnership
Doing Business As:	26 NORTH HALSTED STREET			
WCIU-TV LIMITED PARTNERSHIP	CHICAGO, IL 60661			
	United States			

## Reimbursement Contact Information

### Reimbursement Contact Name and Information

Applicant	Address	Phone	Email
[Confidential]			

## Preparer Contact Information

### Preparer Contact Name and Information

Applicant	Address	Phone	Email
The Preparer is same as the reimbursement contact.			

## Broadcaster Information and Transition Plan

Question	Response
----------	----------

Will the station be sharing equipment with another broadcast television station or stations (e.g., a shared antenna, co-location on a tower, use of the same transmitter room, multiple transmitters feeding a combiner, etc.)? If yes, enter the facility ID's of the other stations and click 'prefill' to download those stations' licensing information.	Yes
Briefly describe transition plan	WCIU broadcasts from Willis Tower in Chicago, IL. WCIU plans operate on the Aux antenna and transmitter while the Main antenna and transmitter are replaced. Once replaced, the Aux antenna and transmitter will be replaced.

## Transmitters

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

**Auxiliary  
Transmitter****Add Transmitter Information**

Section	Question	Response
<b>Existing Transmitter Description</b>	Type of change	Purchase New
	Use	Auxiliary (Backup)
	Description of Use	Backup and Maintenance
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmitter currently shared with another station?	No
	Is this transmitter currently in operating condition?	Yes
<b>Existing Transmitter Manufacturer and Type</b>	Manufacturer	
	Model	TDU2 8K00LV
	Year	2006
	Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power Capacity	8 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?	No
	Manufacturer	
	Model	THU9-EVO
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	9.8 kW
	Justification for New Transmitter	The current mask filter is channel-specific and must be replaced. The current transmitter is no longer supported by the manufacturer and as a result, is unable to be retuned.

**Auxiliary  
Transmitter****Other Transmitter Costs**

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

	Rigid Conduit and Wiring	Yes
	Size	4 inches
	Length	200.0 feet
	Other Electrical Service	No
	Description	N/A
<b>HVAC Service</b>	Does the replacement transmitter require HVAC Service?	No
	Type	N/A
	Size	N/A
	Other Size	N/A
<b>Transmitter Building Addition/Modification or Leasehold Improvement</b>	Does the Transmitter Building require an addition, modification, other leasehold improvement?	No
	Size	N/A
<b>Channel 14 Costs</b>	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

## Auxiliary Transmitter

### Other Transmitter Cost Not Listed

Name	Description
<b>Structural Analysis</b>	WCIU's transmission facility is located on floor 101 of Willis Tower. Willis Tower requires a detailed analysis of all equipment loads with respect to the structural aspects of the building.
<b>State and City Taxes</b>	State and city taxes are required for equipment that is purchased, but not services.
<b>Structural Modifications</b>	As a result of the Structural Analysis, modifications may be required.

---

**Transmitter Installation**

Willis Tower has unique labor requirements. Standard transmitter installation practices are not allowed due to labor agreements. Only building electrical and plumbing contractors may perform any electric or plumbing work related to the installation.

---

**Primary  
Transmitter**

**Existing Transmitter Information**

Section	Question	Response
<b>Existing Transmitter Description</b>	Type of change	Purchase New
	Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is this transmitter currently shared with another station?	No
	Is this transmitter currently in operating condition?	Yes
<b>Existing Transmitter Manufacturer and Type</b>	Manufacturer	
	Model	CTT-U- CXIC2R
	Year	2009
	Type	Inductive Output Tube
	IOT Power Type	Two
	Power Capacity	50 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	THU9-EVO
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	55 kW
	Justification for New Transmitter	The current mask filter that is channel-specific and must be replaced. The current transmitter is no longer supported by the manufacturer and as a result, is unable to be retuned. The cost of a replacement IOT exceeds the cost of a solid state.

**Primary  
Transmitter**

**Other Transmitter Costs**

Section	Question	Response
---------	----------	----------



<b>Electrical Service</b>	Service Entrance (3 phases 800A 208V)	No
	Switchgear (industrial 800 amp)	Yes
	Transformer (480V)	No
	Power	N/A
	Rigid Conduit and Wiring	Yes
	Size	4 inches
	Length	300.0 feet
	Other Electrical Service	No
	Description	N/A
<b>HVAC Service</b>	Does the replacement transmitter require HVAC Service?	Yes
	Type	Cooling Only
	Size	10 tons
	Other Size	N/A
<b>Transmitter Building Addition/Modification or Leasehold Improvement</b>	Does the Transmitter Building require an addition, modification, other leasehold improvement?	No
	Size	N/A
<b>Channel 14 Costs</b>	Is an RF Consulting Engineer needed?	N/A
	Is a channel 14 Mask Filer needed?	N/A
	Is additional field engineering time needed?	N/A
	Number of Days	N/A

**Primary Transmitter**

**Other Transmitter Cost Not Listed**

Name	Description
<b>Structural Analysis</b>	WCIU's transmission facility is located on floor 101 of Willis Tower. Willis Tower requires a detailed analysis of all equipment loads with respect to the structural aspects of the building.

<b>Transmitter Installation</b>	Willis Tower has unique labor requirements. Standard transmitter installation practices are not allowed due to labor agreements. Only building electrical and plumbing contractors may perform any electric or plumbing work related to the installation.
<b>Structural Modifications</b>	As a result of the Structural Analysis, modifications may be required.
<b>State and City Taxes</b>	State and city taxes are required for equipment that is purchased, but not services.

**Antennas**

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

**Auxiliary  
Antenna****Add Antenna Information**

Section	Question	Response
Existing Antenna Description	Type of change	Retune Existing
	Antenna Use	Auxiliary (Backup)
	Description of Use	Willis Tower NE Master AUX Antenna
	Ownership	Leased
	Owner	BRE Broadcast, LLC
	Site	N/A
	Is this antenna currently shared with any other stations?	Yes
	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 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	8

Number of Panels	24
Design power capacity in use	100.0 %
Lower Limit	470.00 MHz
Upper Limit	699.00 MHz
Other Antenna Type	N/A
ERP: (Effective Radiated Power) .....	2500.0 kW
Manufacturer	RFS
Model	PHP24C
Year	1999

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

Facility ID	Call Sign
48772	WPWR-TV
10802	WTTW
22211	WFLD
47905	WMAQ-TV
70119	WSNS-TV
71428	WCIU-TV
72115	WGN-TV
73226	WLS-TV

**Auxiliary  
Antenna**

**Adjustment to Existing Antenna**

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

**Auxiliary  
Antenna**

**Other Antenna Costs**

Section	Question	Response
<b>Combiner for Shared Antenna</b>	Do you need a Combiner for a Shared Antenna?	Yes
	Type	New
	Number of channels supported	7
	Frequencies of channels supported	Upper and lower frequency
	Frequency	470.0 MHz - 610.0 MHz

**Auxiliary  
Antenna**

**Other Antenna Cost Not Listed**

Information not provided.

**Primary  
Antenna**

**Existing Antenna Information**

Section	Question	Response
<b>Existing Antenna Description</b>	Type of change	Purchase New
	Antenna Use	Primary (Main)
	Description of Use	N/A
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing antenna shared with another station or stations?	No
	Is the existing antenna directional?	Yes
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	Yes
<b>Existing Antenna Manufacturer and Type</b>	Class	Full Power
	Mounting	Side 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) .....	550.0 kW

Manufacturer	
Model	TFU-10DSC /VP-R CT170
Year	2009

Primary  
Antenna

New Antenna Costs

Section	Question	Response
New Antenna Description	Use	Primary (Main)
	Description of Use	N/A
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Ownership	Owned
	Owner	N/A
	Is antenna shared?	No
	Is antenna directional?	Yes
	Will antenna be located on or in close proximity to an antenna farm?	Yes
New Antenna Manufacturer and Types	Class	Full Power
	Mounting	Side Mount
	Antenna position in stack	Not in Stack
	Polarization	Elliptical
	Type	Slotted Coaxial
	Number of Stations Supported	N/A
	Number of Panels/Bays	N/A
	Lower Limit	N/A
	Upper Limit	N/A
	Design power capacity in use	N/A
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power) .....	503.0 kW
	Manufacturer	



Model	TFU-10DSC /VP-R CT170
Year	2019
Justification for New Antenna	The current WCIU main antenna is a slot antenna designed for channel 27. An equivalent replacement antenna is being proposed for channel 23.

## Primary Antenna

### Other Antenna Costs

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

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

**Primary  
Antenna**

**Other Antenna Cost Not Listed**

Name	Description
<b>State and City Taxes</b>	State and city taxes are required for equipment that is purchased, but not services.

**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	Dielectric
	Type	Rigid
	Diameter	6 1/8 inches
	Other Diameter	N/A
	Segment Length	Other
	Other Segment Length	10 feet
	Number of parallel runs	1
	Length	270 feet per run

Primary Transmission Line

Other Transmission Line Expenses Not Listed

Information not provided.

Auxiliary Transmission Line

Add Transmission Line

Section	Question	Response
Existing Transmission Line Description	Type of change	Utilize Existing
	Use	Auxiliary (Backup)
	Description of Use	Backup and Maintenance
	Ownership	Owned
	Owner	N/A
	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	Andrew
	Type	Flexible Air
	Diameter	5 inches
	Other Diameter	N/A
	Segment Length	N/A
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	80 feet per run

Auxiliary Transmission Line

Other Transmission Line Expenses Not Listed

Name	Description
------	-------------

---

**Willis AUX Antenna**

Due to the change in location of the Willis AUX combiner room, it is estimated that we will need to add approx. 40' of line to the existing line to reach the new combiner room.

---

**Tower  
Equipment  
And  
Rigging  
Costs**

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

**Auxiliary  
Tower**

**Add Tower**

Section	Question	Response
Existing Tower Description	Type of change	Modify Existing
	Tower Use	Auxiliary (Backup)
	Description of Use	Backup and Maintenance
	Ownership	Leased
	Is this tower consider Complex?	Located on Building
	Is this tower currently shared with any other stations?	Yes
	One or more FM, AM or TV radio broadcaster(s)	Yes
	Others Types of Users	Yes
	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	1032960
Coordinates (NAD83 ( North American Datum of 1983))	Latitude (NAD83)	41° 52' 44.0" N-
	Longitude (NAD83)	087° 38' 08.0" W-
	Overall Structure Height	1722.09 feet
	Support Structure Height	1435.35 feet

	Ground Elevation Above Mean Sea Level (AMSL)	595.14 feet
	Structure Type	BMAST - Building with Mast
	Tower Owner	233 Broadcast, LLC
	Date Constructed	09/30/2012

**FM, AM or TV radio  
broadcasters. Facility ID's,  
Call Signs and Services of  
other broadcast stations with  
whom the tower is shared**

Facility ID	Call Sign	Service
73226	WLS-TV	DTV
53971	WEBG	FM
51165	WGCI-FM	FM
10801	WFMT	FM
6377	WTMX	FM
10802	WTTW	DTV
72115	WGN-TV	DTV
10981	WCPX-TV	DTV
22211	WFLD	DTV
74178	WKSC-FM	FM
70042	WLIT-FM	FM
9617	WBBM-TV	DTV
73228	WLS-FM	FM
70119	WSNS-TV	DTV
28621	WJMK	FM
32334	WJYS	DTV

9613	WBBM-FM	FM
47905	WMAQ-TV	DTV
48772	WPWR-TV	DTV
71283	WCFS-FM	FM

### Other Types of Users

#### Users

LM Land Mobile

LD TV Services

FX FM Services

### Auxiliary 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

### Auxiliary Tower

### Tower Rigging Costs

Section	Question	Response
Tower Rigging Costs	Complex Tower	Located on Building
Helicopter Services Required	Are helicopter services required?	Yes

### Auxiliary Tower

### Other Tower Expenses Not Listed

Information not provided.



## Primary Tower

### Existing Tower

Section	Question	Response
Existing Tower Description	Type of change	Modify Existing
	Tower Use	Primary (Main)
	Description of Use	N/A
	Ownership	Leased
	Is this tower consider Complex?	Located on Building
	Is this tower currently shared with any other stations?	Yes
	One or more FM, AM or TV radio broadcaster(s)	Yes
	Others Types of Users	Yes
	Is tower documented for structural analysis?	No
	Is tower compliant with Rev G?	No
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	1032959
Coordinates (NAD83 (North American Datum of 1983))	Latitude (NAD83)	41° 52' 44.1" N-
	Longitude (NAD83)	087° 38' 10.2" W-
	Overall Structure Height	1729.97 feet
	Support Structure Height	1435.35 feet
	Ground Elevation Above Mean Sea Level (AMSL)	595.14 feet
	Structure Type	BTWR - Building with Tower

	Tower Owner	233 Broadcast, LLC
	Date Constructed	01/01/2002

**FM, AM or TV radio  
broadcasters. Facility ID's,  
Call Signs and Services of  
other broadcast stations with  
whom the tower is shared**

Facility ID	Call Sign	Service
71425	WWME-CD	DTV
71283	WCFS-FM	FM
70119	WSNS-TV	DTV
9617	WBBM-TV	DTV
72115	WGN-TV	DTV
70042	WLIT-FM	FM
66978	WEDE-CD	DTV
48772	WPWR-TV	DTV
9613	WBBM-FM	FM
47905	WMAQ-TV	DTV
6377	WTMX	FM
28621	WJMK	FM
22211	WFLD	DTV
168662	WMEU-CD	DTV
10802	WTTW	DTV
10801	WFMT	FM
73228	WLS-FM	FM

**Other Types of Users**

Users
-------

---

LD TV Services

---

FX FM Services

---

LM Land Mobile

---

**Primary  
Tower**

**Tower Modification Costs**

Section	Question	Response
Engineering Study	Please what type of engineering study is required, if any:	Study needed for undocumented /poorly 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	Located on Building
Helicopter Services Required	Are helicopter services required?	No

**Primary  
Tower**

**Other Tower Expenses Not Listed**

Information not provided.

**Outside  
Professional Services Costs**

Section	Question	Response
<b>Outside Project Management Services</b>	Do you require outside project management services?	No
	Number of Hours	N/A
	Explanation	N/A
<b>Outside RF consulting Engineering Services</b>	Perform engineering study for new channel assignment and antenna development	Yes
	Prepare engineering section of Form FCC Construction Permit Application	Yes
	For Auxiliary Facility	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	Yes
	Quantity	1
	Do you have Distributed Transmission System engineering services?	N/A
	Critical Facility	N/A
	Terrain-Shielded Facility	N/A
<b>Attorney and Other Outside Consulting Services</b>	Prepare and file Form FCC Construction Permit Application	Yes
	For Auxiliary Facility	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	Yes
	Prepare or Review FCC Form 399 for Reimbursement	Yes
	Address transition timing and coordination issues w/ other stations and wireless providers	Yes
<b>RF Field Engineering Services</b>	Comprehensive coverage verification via field study	No
	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**  
 If wireless is not provided.

## Other Expenses

Section	Question	Response
<b>AM Pattern Disturbance</b>	Is an Impact Study needed?	No
	Is Remediation needed?	No
<b>Facility Expenses</b>	Name	N/A
	Other Distributed Transmission System Expenses Not listed	N/A
	Name	N/A
	Is Notification of a Medical Facility required as a result of DTV broadcasting?	Yes
<b>Permit and Filing Costs</b>	Local Zoning	No
	Non-zoning permits	No
	BLM or NFS Coordination	No
	FCC Construction Permit Minor Change	Yes
	FCC License to Cover Application	Yes
	FCC Special Temporary Authority Application	Yes
<b>Other Miscellaneous Expenses</b>	Does this relocation require paying Disposal Costs (for equipment and other waste, net of any salvage value)?	Yes
	Does this relocation require Equipment Delivery or Handling Charges not otherwise included in individual item costs?	Yes
	Does this relocation require Equipment Storage?	No
	Does this relocation require the Development and Airing of an Announcement regarding an upcoming channel change?	No
	Does this relocation require MVPD Notification of a Channel Change?	Yes

**Other  
Expenses**

**Other Expenses Not Listed**

Name	Description
<b>Combiner Room Construction</b>	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$90,000 for the Combiner Room Construction for the EAST Tower AUX antenna. WCIU's portion, \$12,857.14
<b>Cylinder Entry Port Resoration</b>	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$150,000 for the Cylinder Entry Port Restoration for the EAST Tower AUX antenna. WCIU's portion, \$25,000.
<b>East Pole Material Disposal</b>	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$80,000 for the East Pole Material Disposal for the EAST Tower AUX antenna. WCIU's portion, \$13,333.33.
<b>Equipment Storage</b>	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$2,000 for the Equipment Storage for the EAST Tower AUX antenna. WCIU's portion, \$333.33.
<b>Transmission Line Installation</b>	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$125,000 for the Transmission Line Installation of the EAST Tower AUX antenna. WCIU's portion, \$20,833.
<b>Transmission Line Removal</b>	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$250,000 for the Transmission Line Removal of the EAST Tower AUX antenna. WCIU's portion, \$41,666.67.
<b>RF Safety Coordination</b>	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$100,000 for the RF Safety Coordination of the EAST Tower AUX antenna. WCIU's portion, \$16,666.67.
<b>Outside Project Management</b>	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$95,000 for the Outside Project Management of the EAST Tower AUX antenna. WCIU's portion, \$15,833.

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-EVO	\$2,069,170.13	\$1,497,407.35		\$0.00	
Structural Analysis	<i>\$5,500.00</i>	\$5,500.00	Willis Tower requires loading studies for equipment that exceeds normal tenant office loads, such as broadcast equipment. Actual costs to be determined once final equipment selection has been made.	N/A	N/A
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	N/A	N/A	N/A
10 Ton system	\$38,900.00	\$37,000.00	N/A	N/A	N/A
4" Rigid Conduit and Wiring (Cost per foot)	\$30,300.00	\$28,800.00	N/A	N/A	N/A
UHF - Liquid Cooled Solid State Transmitter 52 - 61 kW	\$1,788,000.00	\$1,221,537.22	N/A	N/A	N/A



State and City Taxes	<b>\$118,270.13</b>	\$118,270.13	State and city taxes are required for equipment that is purchased, but not services.	N/A	N/A
Structural Modifications	<b>\$20,000.00</b>	\$20,000.00	Willis Tower requires loading studies for heavy equipment that is installed in the building. As a result, it is anticipated that additional reinforcement will be required. Actual costs to be determined once final equipment selection has been made.	N/A	N/A

Transmitter Installation	<b>\$30,000.00</b>	\$30,000.00	Willis Tower requires union labor for all electric and cooling connections. This is a general allowance to cover the additional labor fees for union labor to perform the transmitter installation and building water connections.	N/A	N/A
<b>Auxiliary Transmitter THU9-EVO</b>	<b>\$616,554.82</b>	<b>\$414,496.43</b>		<b>\$0.00</b>	
Transmitter Installation	<b>\$20,000.00</b>	\$20,000.00	Willis Tower requires union labor for all electric and cooling connections. This is a general allowance to cover the additional labor fees for union labor to perform the transmitter installation and building water connections.	N/A	N/A

State and City Taxes	<b>\$26,654.82</b>	\$26,654.82	State and city taxes are required for equipment that is purchased, but not services.	N/A	N/A
Structural Analysis	<b>\$4,500.00</b>	\$4,500.00	Willis Tower requires loading studies for equipment that exceeds normal tenant office loads, such as broadcast equipment. Actual costs to be determined once final equipment selection has been made.	N/A	N/A

Structural Modifications	<b>\$12,500.00</b>	\$12,500.00	Willis Tower requires loading studies for heavy equipment that is installed in the building. As a result, it is anticipated that additional reinforcement will be required. Actual costs to be determined once final equipment selection has been made.	N/A	N/A
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	\$494,500.00	\$295,341.61	N/A	N/A	N/A
Switchgear - industrial 800 amp	\$38,200.00	\$36,300.00	N/A	N/A	N/A
4" Rigid Conduit and Wiring (Cost per foot)	\$20,200.00	\$19,200.00	N/A	N/A	N/A
<b>Sub-total</b>	\$2,685,724.95	\$1,911,903.78	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$5,013,417.62	\$3,320,275.64	N/A	\$0.00	N/A

## Components

Information not provided.

## Cost Information

### Antennas

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
<b>Primary Antenna TFU-10DSC/VP-R CT170</b>	<b>\$185,705.06</b>	<b>\$185,445.06</b>		<b>\$0.00</b>	
State and City Taxes	<i>\$16,181.06</i>	\$16,181.06	State and city taxes are required for equipment that is purchased, but not services.	N/A	N/A
Pattern scatter analysis for side mount high /med power antennas (if not included in antenna base cost)	\$5,260.00	\$5,000.00	N/A	N/A	N/A
UHF - High Power, Side Mount, basic slot antenna, 503 kW input, directional,, elliptically or circularly polarized	<i>\$164,264.00</i>	\$164,264.00	This is the cost of the current licensed antenna, but on channel 23.	N/A	N/A
<b>Auxiliary Antenna PHP24C</b>	<b>\$487,453.81</b>	<b>\$470,566.67</b>		<b>\$0.00</b>	
Sweep test of existing antenna	\$6,730.00	\$6,400.00	N/A	N/A	N/A

UHF - High Power Top Mount Eight Station broadband panel antenna horizontally polarized	<b>\$396,523.81</b>	\$396,523.81	Due to the complexities of channel changes, Willis must make major structural changes to the rooftop. As a result, the existing MAIN master antenna will be repurposed as an AUX. See attachment. All but WLS and WGN are participating	N/A	N/A
New combiner, cost per channel (without antenna)	\$84,200.00	\$67,642.86	N/A	N/A	N/A
<b>Sub-total</b>	\$673,158.87	\$656,011.73	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$5,013,417.62	\$3,320,275.64	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	\$0.00	\$0.00		\$0.00	
Auxiliary Transmission Line	\$8,000.00	\$8,000.00		\$0.00	
Willis AUX Antenna	<i>\$8,000.00</i>	\$8,000.00	Due to the relocation of the Willis Tower AUX antenna combiner room, WCIU is required to extend the existing 5" flex line 80' from the old combiner room to the new combiner room. (80'x\$100 /ft)	N/A	N/A
<b>Sub-total</b>	\$8,000.00	\$8,000.00	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$5,013,417.62	\$3,320,275.64	N/A	\$0.00	N/A

### Components

Information not provided.

## Cost Information

### Tower Equipment and Rigging Costs

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
<b>Primary Tower BTWR</b>	<b>\$605,300.00</b>	<b>\$172,500.00</b>		<b>\$0.00</b>	
Tower mapping for an undocumented /poorly documented tower and preparation of documentation necessary for tower load study	\$26,300.00	\$12,500.00	N/A	N/A	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$75,000.00	N/A	N/A	N/A
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	\$421,000.00	\$85,000.00	N/A	N/A	N/A
<b>Auxiliary Tower BMAST</b>	<b>\$791,600.00</b>	<b>\$325,001.33</b>		<b>\$0.00</b>	



Structural engineering tower load study for well documented tower	\$12,600.00	\$16,668.00	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$100,000 for the East Pole Decommissioning of the EAST Tower AUX antenna. WCIU's portion, \$16,666.67	N/A	N/A
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	\$421,000.00	\$33,333.33	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$200,000 for the East Pole Decommission Prep Work of the EAST Tower AUX antenna. WCIU's portion, \$33,333.33.	N/A	N/A
Tower Helicopter Lift	\$200,000.00	\$200,000.00	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$600,000 for the NE Decommission Lift of the EAST Tower AUX antenna. WCIU's portion, \$200,000.	N/A	N/A
Minor tower reinforcement /modifications	\$158,000.00	\$75,000.00	N/A	N/A	N/A

<b>Sub-total</b>	\$1,396,900.00	\$497,501.33	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$5,013,417.62	\$3,320,275.64	N/A	\$0.00	N/A

## Components

Information not provided.

## Cost Information

### Outside Professional Services

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

Description	Predetermined Cost Estimate	Estimated Cost	Estimated Cost Justification	Actual Cost	Actual Cost Justification
<b>Outside Professional Services</b>	<b>\$34,920.00</b>	<b>\$32,750.00</b>		<b>\$0.00</b>	
Address transition timing and coordination issues w/ other stations and wireless	\$2,630.00	\$2,500.00	N/A	N/A	N/A
Perform engineering study for new channel assignment and antenna development	\$7,360.00	\$7,000.00	N/A	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), Construction Permit Application	\$3,155.00	\$3,000.00	N/A	N/A	N/A
Prepare engineering section of FCC Form 2100 (main), License to Cover Application	\$1,580.00	\$1,500.00	N/A	N/A	N/A
Prepare request for Special Temporary Authorization	\$2,050.00	\$1,500.00	N/A	N/A	N/A

Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application	\$5,260.00	\$5,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application	\$2,365.00	\$2,250.00	N/A	N/A	N/A
Attorney Fees - Negotiation of lease and other matters for shared locations	\$4,210.00	\$4,000.00	N/A	N/A	N/A
Attorney Fees - Prepare and File request for Special Temporary Authorization	\$3,680.00	\$3,500.00	N/A	N/A	N/A
Prepare and or review reimbursement form	\$2,630.00	\$2,500.00	N/A	N/A	N/A
<b>Sub-total</b>	\$34,920.00	\$32,750.00	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$5,013,417.62	\$3,320,275.64	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
<b>Other Expenses</b>	<b>\$214,713.80</b>	<b>\$214,108.80</b>		<b>\$0.00</b>	
Equipment Delivery and Handling Charges	<i>\$2,500.00</i>	\$2,500.00	Willis Tower loading dock after hours fees.	N/A	N/A
FCC Filing Fees - Special Temporary Authorization request	\$195.00	\$190.00	N/A	N/A	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	<i>\$50,000.00</i>	\$50,000.00	Removal of WCIU IOT transmitter cabinets, beam supplies, RF System, cooling system, electrical system.	N/A	N/A
MVPD Notification of Channel Change	<i>\$2,500.00</i>	\$2,500.00	Notification to all MVPD regarding channel changes.	N/A	N/A

Combiner Room Construction	<b>\$12,857.14</b>	\$12,857.14	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$90,000 for the Combiner Room Construction of the EAST Tower AUX antenna. WCIU's portion, \$12,857.14.	N/A	N/A
Cylinder Entry Port Restoration	<b>\$25,000.00</b>	\$25,000.00	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$150,000 for the Cylinder Entry Port Restoration of the EAST Tower AUX antenna. WCIU's portion, \$25,000.	N/A	N/A

East Pole Material Disposal	<b>\$13,333.33</b>	\$13,333.33	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$80,000 for the East Pole Material Disposal of the EAST Tower AUX antenna. WCIU's portion, \$13,333.33	N/A	N/A
Equipment Storage	<b>\$333.33</b>	\$333.33	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$2,000 for the Equipment Storage of the EAST Tower AUX antenna. WCIU's portion, \$333.33.	N/A	N/A

Transmission Line Installation	<b>\$20,833.33</b>	\$20,833.33	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$125,000 for the Transmission Line Installation of the EAST Tower AUX antenna. WCIU's portion, \$20,833.33	N/A	N/A
Transmission Line Removal	<b>\$41,666.67</b>	\$41,666.67	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$250,000 for the Transmission Line Removal of the EAST Tower AUX antenna. WCIU's portion, \$41,666.67.	N/A	N/A



RF Safety Coordination	<b>\$16,666.67</b>	\$16,666.67	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$100,000 for the RF Safety Coordination of the EAST Tower AUX antenna. WCIU's portion, \$16,666.67.	N/A	N/A
Outside Project Management	<b>\$15,833.33</b>	\$15,833.33	See attached Willis Tower Budget Overview for EAST Tower RFS Systems. Willis Tower estimates \$95,000 for the Outside Project Management of the EAST Tower AUX antenna. WCIU's portion, \$15,833.33.	N/A	N/A
DTV Medical Facility Notification	\$11,550.00	\$11,000.00	N/A	N/A	N/A
FCC Filing Fees - Form 2100 minor change CP application	\$1,110.00	\$1,070.00	N/A	N/A	N/A

FCC Filing Fees - Form 2100 license to cover application	\$335.00	\$325.00	N/A	N/A	N/A
<b>Sub-total</b>	\$214,713.80	\$214,108.80	N/A	\$0.00	N/A
<b>Total for all systems</b>	\$5,013,417.62	\$3,320,275.64	N/A	\$0.00	N/A

## Components

Information not provided.

<b>Cost Information</b>	<b>Grand Total</b>		
		<b>Predetermined Cost Estimate</b>	<b>Estimated Cost</b>
			<b>Actual Cost</b>
	<b>Total for all systems</b>	\$5,013,417.62	\$3,320,275.64
			\$0.00

<b>Reimbursement Status</b>	<b>Question</b>	<b>Response</b>
	The facility has ceased operating on its pre-auction channel.	No
	Construction of final facilities or all necessary modifications are complete.	No
	All receipts for reimbursement have been submitted no further costs are expected to be incurred. Note this will lock the Form 399 from further editing and begin close-out procedures with the Fund Administrator.	No

Certification	Section	Question	Response
	Submission of Estimated Expenses Statements	<p>WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND /OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a) (1), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503), AND ANY FALSE STATEMENTS COULD SUBJECT THIS ENTITY TO LIABILITY UNDER THE FALSE CLAIMS ACT.</p>	
		<ol style="list-style-type: none"> <li>1. The Authorized Person signing below certifies that he /she is authorized to submit this TV Broadcaster Relocation Fund Reimbursement Form on behalf of the above-named entity.</li> <li>2. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.</li> <li>3. The above-named entity acknowledges the submission of the information herein creates no obligation on the part of the government to pay any amount.</li> </ol>	

4. The above-named entity certifies that the equipment and services paid for with money from the TV Broadcaster Relocation Fund are necessary to change channels (broadcasters) or to continue to carry the signal of a broadcaster that changes channels (MVPD).
5. The above-named entity certifies that all payments from the TV Broadcaster Relocation Fund (Fund) received by the entity listed on this form will be used only for expenses that are eligible for reimbursement from the Fund.
6. The above-named entity certifies that it will maintain and provide to the Commission detailed records, including receipts, of all costs eligible for reimbursement actually incurred.
7. The above-named entity acknowledges that overpayments or payments in error must be promptly refunded to the Commission.

<p>8. The above-named entity certifies that it is in full compliance with all statutes, rules, regulations and governmental requirements for which compliance is a pre-requisite for obtaining the payments herein requested.</p>	
<p>I declare, under penalty of perjury, that I am an authorized representative of the above-named applicant for the Authorization(s) specified above.</p>	<p><b>Kyle B Walker</b> VP, <i>Technology</i></p> <p>07/12/2017</p>

## Attachments