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: **10802** | Service: **DTV** | Call Sign: **WTTW** | Channel: **47 (UHF)**

File Number: **0000028360**

FRN: **0002860179** | Date Submitted: **05/14/2019**

Applicant Information

Applicant Name, Type, and Contact Information

Applicant	Address	Phone	Email	Applicant Type
WINDOW TO THE WORLD COMMUNICATIONS, INC. Doing Business As: WINDOW TO THE WORLD COMMUNICATIONS, INC.	Eshed Halpern 5400 NORTH ST. LOUIS AVE CHICAGO, IL 60625 United States	+1 (773) 509-5412	ehalpern@wttw.com	Not-for-Profit

Reimbursement Contact Information

Reimbursement Contact Name and Information

Applicant	Address	Phone	Email
[Confidential]			

Preparer Contact Information

Preparer Contact Name and Information

Applicant	Address	Phone	Email
Mike Tompary *Window to the World Communications, Inc.*	5400 N. St. Louis Ave Chicago, IL 60625 United States	+1 (773) 509-2460	mtompary@wttw.com

Broadcaster Information and Transition Plan

Question	Response
Will the station be sharing equipment with another broadcast television station or stations (e.g., a shared antenna, co-location on a tower, use of the same transmitter room, multiple transmitters feeding a combiner, etc.)? If yes, enter the facility ID's of the other stations and click 'prefill' to download those stations' licensing information.	Yes
Briefly describe transition plan	Replace aux transmitter with new transmitter and place on air. Replace main transmitter and antenna and place on air at end of phase six. Reconfigure aux and antenna and place into standby.

Transmitters

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

Auxiliary Transmitter

Existing Transmitter Information

Section	Question	Response
Existing Transmitter Description	Type of change	Purchase New
	Use	Auxiliary (Backup)
	Description of Use	For backup if main transmitter fails
	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	Sigma CD Diamond Drive
	Year	2001
	Type	Inductive Output Tube
	IOT Power Type	Single
	Power Capacity	24 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	ULXTE-20
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	10.8 kW
	Justification for New Transmitter	Due to channel reassignment need lower power transmitter and new exciters.

Auxiliary Transmitter

Other Transmitter Costs

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	No
	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	Sigma CD Diamond Drive
	Year	2001
	Type	Inductive Output Tube
	IOT Power Type	Single
	Power Capacity	24 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	ULXTE-20
	Transmitter Type	Solid State
	Solid State Cooling	Liquid Cooled
	Solid State Power capacity	10.8 kW
	Justification for New Transmitter	Due to channel reassignment need lower power transmitter and new exciters.

Primary Transmitter

Other Transmitter Costs

Section	Question	Response
Electrical Service	Service Entrance (3 phases 800A 208V)	No
	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	Yes

	Description	Electricans to remove old equipment and install new equipment. Relocate or remove and reinstall all electric work. To remove existing and hang new transmission line. To remove offsite all old 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
Great Lakes Plumbing	GL Plumbing to connect cooling system to building water

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	Retune Existing
	Antenna Use	Auxiliary (Backup)
	Description of Use	Used as backup if main antenna fails
	Ownership	Owned
	Owner	N/A
	Site	N/A
	Is the existing antenna shared with another station or stations?	Yes
	Is the existing antenna directional?	Yes
	Is antenna in operating condition?	Yes
	Is antenna located on or in close proximity to an antenna farm?	Yes
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	Side Mount
	Antenna position in stack	Middle
	Polarization	Horizontal
	Type	Broadband Panel
	Number of Stations Supported	7
	Number of Panels	8

Design power capacity in use	100.0 %
Lower Limit	470.00 MHz
Upper Limit	700.00 MHz
Other Antenna Type	N/A
ERP: (Effective Radiated Power)	300.0 kW
Manufacturer	RFS
Model	PHP24C
Year	2004

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

Facility ID	Call Sign
10981	WCPX-TV
22211	WFLD
32334	WJYS
47905	WMAQ-TV
71428	WCIU-TV
72115	WGN-TV

Auxiliary Antenna

Adjustment to Existing Antenna

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

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	

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?	Yes
Existing Antenna Manufacturer and Type	Class	Full Power
	Mounting	Side Mount
	Antenna position in stack	Middle
	Polarization	Horizontal
	Type	Slotted Coaxial
	Number of Stations Supported	N/A
	Number of Panels	N/A
	Design power capacity in use	N/A
	Lower Limit	N/A
	Upper Limit	N/A
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	300.0 kW

Manufacturer	
Model	ATW13H4 - HSC1 - 47S
Year	2001

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?	Yes
	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	Middle
	Polarization	Elliptical
	Type	Broadband Panel
	Number of Stations Supported	2
	Number of Panels/Bays	24
	Lower Limit	488.00 MHz
	Upper Limit	608.00 MHz
	Design power capacity in use	100.0 %
	Other Antenna Type	N/A
	ERP: (Effective Radiated Power)	193.0 kW
	Manufacturer	
	Model	PEPL24C

Year	2017
Justification for New Antenna	Channel reassignment from repack

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	Upper and lower frequency
	Frequency	488.0 MHz - 608.0 MHz
	Do you need a combiner output splitter /switcher for dual feed lines?	No
Elbow Complex	Do you require the separate purchase of the Elbow Complex?	No
	Broadband or Single Channel?	N/A
	Feed Line Size	N/A
Side Mount Brackets	Do you require the separate purchase of side mount brackets for a high power antenna?	Yes
Pattern Scatter Analysis	Do you require separate purchase of pattern scatter analysis for a side mount high or medium power antenna?	Yes
Sweep Test	Do you require the sweep testing of transmission line and antenna?	Yes

Primary Antenna

Other Antenna Cost Not Listed

Name	Description
Combiner Installation and Commissioning	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Tower Modifications	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Antenna Delivery to Willis	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Antenna Mounts	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Combiner Module	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Equipment Storage	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Combiner Freight	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Transmission Line	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Outside Project Management	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Combiner Delivery to Willis	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Combiner Room Construction	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Transmission Line Installation	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System

Antenna Installation and Commissioning	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Radome Modifications	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Antenna Freight	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Structional Engineering	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Combiner Spine	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Permitting	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Transmission Line Mounts	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
Internal Transmission Line	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
RFR Measurements	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System
RF Safety Coordination	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System

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	Purchase New
	Use	Auxiliary (Backup)
	Description of Use	Use if main line fails
	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	4 1/16 inches
	Other Diameter	N/A
	Segment Length	20 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	100 feet per run

Auxiliary Transmission Line

New Transmission Line

Section	Question	Response
New Transmission Line Costs	Use	Auxiliary (Backup)
	Description of Use	Use if main fails
	Change Type	Purchase New
	Is this a request for upgraded equipment?	No
	Type	Rigid
	Diameter	6 1/8 inches
	Other Diameter	N/A
	Segment Length	20 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	100 feet per run
	Justification for New Transmission Line	Additional power to antenna. See exhibit attached page 6

Auxiliary Transmission Line

Other Transmission Line Expenses Not Listed

Name	Description
Electrican Hanging	Electrician to hang and remove old transmission lines.

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	4 1/16 inches
	Other Diameter	N/A
	Segment Length	20 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	100 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?	No
	Type	Rigid
	Diameter	6 1/8 inches
	Other Diameter	N/A
	Segment Length	20 inches
	Other Segment Length	N/A
	Number of parallel runs	1
	Length	100 feet per run
	Justification for New Transmission Line	Additional power to antenna. See exhibit attached page 6

Primary Transmission Line

Other Transmission Line Expenses Not Listed

Name	Description
Electrican Hanging	Electrician to hang and remove old transmission line

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

Existing Tower

Section	Question	Response
Existing Tower Description	Type of change	Modify Existing
	Tower Use	Auxiliary (Backup)
	Description of Use	Use if main tower fails
	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	No
	Is tower documented for structural analysis?	Yes
	Is tower compliant with Rev G?	Yes
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	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
74178	WKSC-FM	FM
9613	WBBM-FM	FM
48772	WPWR-TV	DTV
47906	KNBC	DTV
71283	WCFS-FM	FM
72115	WGN-TV	DTV
10981	WCPX-TV	DTV
73228	WLS-FM	FM
32334	WJYS	DTV
70119	WSNS-TV	DTV
51165	WGCI-FM	FM
28621	WBMX	FM
6377	WTMX	FM
73226	WLS-TV	DTV
70042	WLIT-FM	FM
9617	WBBM-TV	DTV

168662	WMEU-CD	DTV
10801	WFMT	FM
22211	WFLD	DTV
71425	WWME-CD	DTV
10802	WTTW	DTV
53971	WEBG	FM
71428	WCIU-TV	DTV
66978	WEDE-CD	DTV

Auxiliary 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:	Major 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?	No

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	No
	Is tower documented for structural analysis?	Yes
	Is tower compliant with Rev G?	Yes
Existing Tower Structure Registration	Do you have a tower registration number?	Yes
	ASR Number	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
71428	WCIU-TV	DTV
70042	WLIT-FM	FM
71425	WWME-CD	DTV
73226	WLS-TV	DTV
73228	WLS-FM	FM
32334	WJYS	DTV
9613	WBBM-FM	FM
10802	WTTW	DTV
9617	WBBM-TV	DTV
10801	WFMT	FM
10981	WCPX-TV	DTV
70119	WSNS-TV	DTV
47906	KNBC	DTV
72115	WGN-TV	DTV
168662	WMEU-CD	DTV
22211	WFLD	DTV
6377	WTMX	FM
66978	WEDE-CD	DTV
28621	WBMX	FM

53971	WEBG	FM
48772	WPWR-TV	DTV
51165	WGCI-FM	FM
74178	WKSC-FM	FM
71283	WCFS-FM	FM

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:	Major 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?	Yes

Primary Tower

Other Tower Expenses Not Listed

Name	Description
WTTW Antenna Removal	Helicopter not required. Estimated 4 nights.
WTTW Antenna Removal RF Safety Coordination	Antenna Removal RF Safety Coordination
WTTW T L Removal RF Safety Coordination	RF safety coordination during line removal to shaft
SW Pole Material Removal and Disposal	Removal and disposal of remaining SW pole material

WTTW Transmission Line Removal to Smoke Shaft	Estimated 5 nights of work to complete.
SW Pole Decommission Preparation Work	Estimated 10 nights of work for preparation.
WTTW T L Removal to 100 in smoke shaft	Removal of line in shaft from 109 to 100.
SW Pole Decommission Prep. Work RF Safety Coord.	RF safety coordination for SW pole decom. prep work
SW Pole Decommission Engineering	Pole Decommission Engineering
WTTW Antenna Removal Engineering	Antenna Removal Engineering
Willis Tower Project Management	Willis Tower Project Management

Outside Professional Services Costs

Section	Question	Response
Outside Project Management Services	Do you require outside project management services?	Yes
	Number of Hours	500
	Explanation	Outside services, such as legal, engineering, consultant.
Outside RF consulting Engineering Services	Perform engineering study for new channel assignment and antenna development	No
	Prepare engineering section of Form FCC Construction Permit Application	No
	For Auxiliary Facility	N/A
	For Main Facility	N/A
	Prepare engineering section of Form FCC License to Cover Application	No
	For Auxiliary Facility	N/A
	For Main Facility	N/A
	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	No
	For Auxiliary Facility	N/A
	For Main Facility	N/A
	Prepare and file Form FCC License to Cover Application	Yes

	For Auxiliary Facility	Yes
	For Main Facility	Yes
	Prepare request for Special Temporary Authority	No
	Quantity	N/A
	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	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?	No
Permit and Filing Costs	Local Zoning	No
	Non-zoning permits	No
	BLM or NFS Coordination	No
	FCC Construction Permit Minor Change	Yes
	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?	No
	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?	No

Other Expenses

Other Expenses Not Listed

Information not provided.

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 ULXTE-20	**$703,900.00**	**$789,235.88**		**$193,278.63**	
Great Lakes Plumbing	***$35,000.00***	$35,000.00	N/A	N/A	N/A
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	$494,500.00	$579,835.88	Whole system included	$193,278.63	N/A
Other Electrical Service: Electricans to remove old equipment and install new equipment. Relocate or remove and reinstall all electric work. To remove existing and hang new transmission line. To remove offsite all old equipment.	***$174,400.00***	$174,400.00	N/A	N/A	N/A
Auxiliary Transmitter ULXTE-20	**$494,500.00**	**$552,003.92**		**$184,001.30**	

UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	$494,500.00	$552,003.92	Whole system included	$184,001.30	N/A
Sub-total	$1,198,400.00	$1,341,239.80	N/A	$377,279.93	N/A
Total for all systems	$4,915,120.60	$3,229,790.40	N/A	$710,486.49	N/A

Components

Actual Information Description	File Name	
Great Lakes Plumbing	Information not provided.	
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	**Component Description:** **Amount:**	1/3 down payment on Primary transmitter cost of $579,835.88 $193,278.63
Other Electrical Service: Electricans to remove old equipment and install new equipment. Relocate or remove and reinstall all electric work. To remove existing and hang new transmission line. To remove offsite all old equipment.	Information not provided.	
UHF - Liquid Cooled Solid State Transmitter 8.2 - 13 kW	**Component Description:** **Amount:**	1/3 of auxiliary transmitter cost of $552,003.92 $184,001.30

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 PEPL24C	**$1,339,570.60**	**$1,220,230.60**		**$330,060.06**	
RF Safety Coordination	***$75,000.00***	$75,000.00	N/A	N/A	N/A
RFR Measurements	***$5,000.00***	$5,000.00	N/A	N/A	N/A
Internal Transmission Line	***$75,000.00***	$75,000.00	N/A	N/A	N/A
Transmission Line Mounts	***$15,000.00***	$15,000.00	N/A	N/A	N/A
Permitting	***$20,000.00***	$20,000.00	N/A	N/A	N/A
Combiner Spine	***$20,000.00***	$20,000.00	N/A	N/A	N/A
Structional Engineering	***$150,000.00***	$150,000.00	N/A	$10,019.00	N/A
Antenna Freight	***$12,500.00***	$12,500.00	N/A	N/A	N/A
Radome Modifications	***$50,000.00***	$50,000.00	N/A	N/A	N/A
Antenna Installation and Commissioning	***$16,482.50***	$16,482.50	N/A	N/A	N/A
Transmission Line Installation	***$75,000.00***	$75,000.00	N/A	N/A	N/A

Combiner Room Construction	***$45,000.00***	$45,000.00	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System	N/A	N/A
Combiner Delivery to Willis	***$10,000.00***	$10,000.00	N/A	N/A	N/A
Outside Project Management	***$92,500.00***	$92,500.00	N/A	$1,355.46	N/A
Transmission Line	***$111,298.10***	$111,298.10	N/A	$111,298.10	N/A
Equipment Storage	***$1,000.00***	$1,000.00	N/A	N/A	N/A
Combiner Module	***$60,980.00***	$60,980.00	N/A	$60,980.00	Price increases since the cost estimates were entered.
Antenna Mounts	***$15,000.00***	$15,000.00	N/A	N/A	N/A
Antenna Delivery to Willis	***$10,000.00***	$10,000.00	N/A	N/A	N/A
Tower Modifications	***$200,000.00***	$200,000.00	N/A	N/A	N/A
Combiner Installation and Commissioning	***$9,062.50***	$9,062.50	N/A	N/A	N/A

Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	$5,260.00	$0.00	N/A	N/A	N/A
Side mount brackets for high power antennas (if not included in antenna base cost)	$23,150.00	$0.00	N/A	N/A	N/A
New combiner, cost per channel (without antenna)	$84,200.00	$0.00	N/A	N/A	N/A
Sweep test of existing antenna	$6,730.00	$0.00	N/A	N/A	N/A
UHF - High Power, Side Mount, broadband panel, 24 bay,, 193 kW input, directional,, elliptically or circularly polarized	***$120,862.50***	$120,862.50	See Willis Tower Preliminary Budget Overview WEST Tower RFS Antenna /Combiner System	$120,862.50	N/A
Combiner Freight	***$5,000.00***	$5,000.00	N/A	N/A	N/A

Combiner Commissioning	***$9,062.50***	$9,062.50	***System Notice: Estimate adjusted and locked because line has been superseded. ***	$9,062.50	N/A
Antenna Commissioning	***$16,482.50***	$16,482.50	***System Notice: Estimate adjusted and locked because line has been superseded. ***	$16,482.50	N/A
Auxiliary Antenna PHP24C	**$11,990.00**	**$0.00**		**$0.00**	
UHF â€“ Broadband Panel, Side Mount Auxiliary /Interim, 300 horizontally polarized	***$0.00***	$0.00	N/A	N/A	N/A
Sweep test of existing antenna	$6,730.00	$0.00	N/A	N/A	N/A
Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	$5,260.00	$0.00	N/A	N/A	N/A
Sub-total	$1,351,560.60	$1,220,230.60	N/A	$330,060.06	N/A

Total for all systems	$4,915,120.60	$3,229,790.40	N/A	$710,486.49	N/A

Components

Actual Information Description	File Name
RF Safety Coordination	Information not provided.
RFR Measurements	Information not provided.
Internal Transmission Line	Information not provided.
Transmission Line Mounts	Information not provided.
Permitting	Information not provided.
Combiner Spine	Information not provided.
Structional Engineering	**Component Description:** WTTW share of WEST RFS Antenna/Combiner System **Amount:** $10,019.00
Antenna Freight	Information not provided.
Radome Modifications	Information not provided.
Antenna Installation and Commissioning	Information not provided.
Transmission Line Installation	Information not provided.
Combiner Room Construction	Information not provided.
Combiner Delivery to Willis	Information not provided.

Outside Project Management	**Component Description:** **Amount:**	Shared cost EAST RFS System $65.29
	Component Description: **Amount:**	Share of West RFS Antenna/Combiner System $1,290.17
Transmission Line	**Component Description:** **Amount:**	50% of various Transmission Line costs as indicated by line number on quotation #20061310 $111,298.10
Equipment Storage	Information not provided.	
Combiner Module	**Component Description:** **Amount:**	50% Combiner, Module from manufacturer quotation #20061310 $60,980.00
Antenna Mounts	Information not provided.	
Antenna Delivery to Willis	Information not provided.	
Tower Modifications	Information not provided.	
Combiner Installation and Commissioning	Information not provided.	
Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	Information not provided.	

Side mount brackets for high power antennas (if not included in antenna base cost)	Information not provided.	
New combiner, cost per channel (without antenna)	Information not provided.	
Sweep test of existing antenna	Information not provided.	
UHF - High Power, Side Mount, broadband panel, 24 bay,, 193 kW input, directional,, elliptically or circularly polarized	**Component Description:** **Amount:**	50% UHF High Power, Side Mount, Broadband panel, 24Bay 193kW input, Directional, Elliptically or circular polarized. Quotation #20061310 $120,862.50
Combiner Freight	Information not provided.	
Combiner Commissioning	**Component Description:** **Amount:**	50% Combiner Commissioning $9,062.50
Antenna Commissioning	**Component Description:** **Amount:**	50% Antenna Commissioning $16,482.50
UHF â€“ Broadband Panel, Side Mount Auxiliary /Interim, 300 horizontally polarized	Information not provided.	
Sweep test of existing antenna	Information not provided.	

Pattern scatter analysis for side mount high/med power antennas (if not included in antenna base cost)	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	**$30,200.00**	**$29,000.00**		**$0.00**	
Rigid Transmission Line - copper, 6 1/8"	$20,200.00	$19,000.00	N/A	N/A	N/A
Electrican Hanging	***$10,000.00***	$10,000.00	N/A	N/A	N/A
Auxiliary Transmission Line	**$30,200.00**	**$29,000.00**		**$0.00**	
Rigid Transmission Line - copper, 6 1/8"	$20,200.00	$19,000.00	N/A	N/A	N/A
Electrican Hanging	***$10,000.00***	$10,000.00	N/A	N/A	N/A
Sub-total	$60,400.00	$58,000.00	N/A	$0.00	N/A
Total for all systems	$4,915,120.60	$3,229,790.40	N/A	$710,486.49	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
Auxiliary Tower BMAST	**$842,000.00**	**$0.00**		**$0.00**	
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	$421,000.00	$0.00	N/A	N/A	N/A
Major tower reinforcement /modifications	$421,000.00	$0.00	N/A	N/A	N/A
Primary Tower BTWR	**$1,349,500.00**	**$507,500.00**		**$0.00**	
WTTW T L Removal RF Safety Coordination	***$12,500.00***	$12,500.00	N/A	N/A	N/A
WTTW Transmission Line Removal to Smoke Shaft	***$50,000.00***	$50,000.00	N/A	N/A	N/A
SW Pole Decommission Preparation Work	***$50,000.00***	$50,000.00	N/A	N/A	N/A
SW Pole Material Removal and Disposal	***$25,000.00***	$25,000.00	N/A	N/A	N/A

SW Pole Decommission Prep. Work RF Safety Coord.	***$12,500.00***	$12,500.00	N/A	N/A	N/A
WTTW T L Removal to 100 in smoke shaft	***$40,000.00***	$40,000.00	N/A	N/A	N/A
WTTW Antenna Removal Engineering	***$30,000.00***	$30,000.00	N/A	N/A	N/A
SW Pole Decommission Engineering	***$32,500.00***	$32,500.00	N/A	N/A	N/A
Willis Tower Project Management	***$27,500.00***	$27,500.00	N/A	N/A	N/A
WTTW Antenna Removal	***$40,000.00***	$40,000.00	N/A	N/A	N/A
WTTW Antenna Removal RF Safety Coordination	***$10,000.00***	$10,000.00	N/A	N/A	N/A
Tower Helicopter Lift	***$177,500.00***	$177,500.00	N/A	N/A	N/A
Complex Tower (includes, for example, those with candelabras and/or stacked antennas)	$421,000.00	$0.00	N/A	N/A	N/A
Major tower reinforcement /modifications	$421,000.00	$0.00	N/A	N/A	N/A

Sub-total	$2,191,500.00	$507,500.00	N/A	$0.00	N/A
Total for all systems	$4,915,120.60	$3,229,790.40	N/A	$710,486.49	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	**$107,150.00**	**$96,750.00**		**$3,146.50**	
RF Exposure Measurements	$21,050.00	$20,000.00	N/A	N/A	N/A
Project management of the transition	$79,000.00	$70,000.00	N/A	$1,747.00	N/A
Prepare and or review reimbursement form	$2,630.00	$2,500.00	N/A	$549.00	N/A
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	$2,105.00	$2,000.00	N/A	$576.00	N/A
Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application	$2,365.00	$2,250.00	N/A	$274.50	N/A
Sub-total	$107,150.00	$96,750.00	N/A	$3,146.50	N/A
Total for all systems	$4,915,120.60	$3,229,790.40	N/A	$710,486.49	N/A

Components

Actual Information Description	File Name
RF Exposure Measurements	Information not provided.
Project management of the transition	**Component Description:** Email regarding auction closing and channel reassignment **Amount:** $50.50 **Component Description:** Analysis and review of FCC online databases, etc. **Amount:** $39.00 **Component Description:** email on FCC post-auction transition procedures and payments **Amount:** $50.50 **Component Description:** Preparation of 2100 CP application and maximization application **Amount:** $1,657.50

Prepare and or review reimbursement form	**Component Description:** **Amount:**	Review form 399 estimates $336.00
	Component Description: **Amount:**	Email regarding form 1876 $101.00
	Component Description: **Amount:**	Prepare & review reimbursement form $112.00
	Component Description: **Amount:**	Analysis of reimbursement form $78.00
	Component Description: **Amount:**	Analysis and research for reimbursement form $156.00
Attorney Fees - Aux Antenna, prepare and File Form 2100 Construction Permit or License Application	**Component Description:** **Amount:**	preparation of construction permit application and form 399 application $498.00
	Component Description: **Amount:**	review construction permit application $78.00

Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application	**Component Description:** **Amount:**	ungranted repack applications $50.50
	Component Description: **Amount:**	repack process and timing $168.00
	Component Description: **Amount:**	regarding repack transition report and form 2100 schedule 387 availability $56.00

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	**$6,110.00**	**$6,070.00**		**$0.00**	
Develop and air announcement of upcoming channel change	***$5,000.00***	$5,000.00	N/A	N/A	N/A
Disposal Costs (for equipment and other waste, net of any salvage value)	***$0.00***	$0.00	N/A	N/A	N/A
Equipment Storage	***$0.00***	$0.00	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
Sub-total	$6,110.00	$6,070.00	N/A	$0.00	N/A
Total for all systems	$4,915,120.60	$3,229,790.40	N/A	$710,486.49	N/A

Components

Information not provided.

Cost Information

Grand Total

	Predetermined Cost Estimate	Estimated Cost	Actual Cost
Total for all systems	$4,915,120.60	$3,229,790.40	$710,486.49

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.	**Paul Gosiewski** *Director of Finance* 05/14/2019

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.	**Paul Gosiewski** *Director of Finance* 05/14/2019

Attachments