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: **66185** | Service: **DTV** | Call Sign: **WOSU-TV** | Channel: **16 (UHF)**

File Number: **0000028867**

FRN: **0006031983** | Date Submitted: **01/18/2019**

## Applicant Information

### Applicant Name, Type, and Contact Information

| Applicant | Address | Phone | Email | Applicant Type |
|---|---|---|---|---|
| **THE OHIO STATE UNIVERSITY**<br>Doing Business As: THE OHIO STATE UNIVERSITY | 2400 OLENTANGY RIVER ROAD<br>COLUMBUS, OH 43210<br>United States | +1 (614) 292-9678 | Tom.Rieland@wosu.org | 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 |
|---|---|---|---|
| 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. | No |
| Briefly describe transition plan | Purchase new transmitter, antenna and transmission line. Lease interim side-mount ch 38 antenna, use existing line to maintain service while top-mount is removed and new antenna, transmitter and line installed. See attached 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 | CD3200P2 |
| | Year | 2003 |
| | Type | Inductive Output Tube |
| | IOT Power Type | Two |
| | Power Capacity | 42 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-50 |
| | Transmitter Type | Solid State |
| | Solid State Cooling | Liquid Cooled |
| | Solid State Power capacity | 31.7 kW |
| | Justification for New Transmitter | Current Sigma CD not frequency agile. Gates advises with re-tuning components likely not available, major-frequency change should not be considered given age, age or cost of IOTs, need for new mask filter and other RF equipment. |

## 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 | 3 inches |
| | Length | 40.0 feet |
| | Other Electrical Service | Yes |
| | Description | Reworking of existing electrical system to rewire main fused disconnect box to protect new transmitter by on-site generator. New distribution panel to feed power cooling transformer. |
| **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? | Yes |
| | | |

| | | |
|---|---|---|
| | Size | 120.0 square feet |
| **Channel 14 Costs** | Is an RF Consulting Engineer needed? | N/A |
| | Is a channel 14 Mask Filer needed? | N/A |
| | Is additional field engineering time needed? | N/A |
| | Number of Days | N/A |

## Primary Transmitter

### Other Transmitter Cost Not Listed

| Name | Description |
|---|---|
| **Liquid Cooling System Items** | These Items not included in transmitter quote. Includes indoor pump modules for multiple PUs, outdoor heat exchangers and coolant. Placed as additional cost because HVAC question was oriented to air-cooled systems. |
| **Exciters** | 2 Gates XTT Multi-Standard Exciter. WOSU currently has two exciters that will not work with new 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 | 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? | 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 | 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) | 511.0 kW |
| | | |

| | |
|---|---|
| Manufacturer | |
| Model | TFU-20GTH-RO4 |
| Year | 2003 |

## 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? | No |
| | Will antenna be located on or in close proximity to an antenna farm? | No |
| **New Antenna Manufacturer and Types** | Class | Full Power |
| | Mounting | Top Mount |
| | Antenna position in stack | Not in Stack |
| | Polarization | Horizontal |
| | 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) | 311.0 kW |
| | Manufacturer | |

| | | |
|---|---|---|
| | Model | ATW15H3-HTO-16H |
| | Year | 2017 |
| | Justification for New Antenna | Existing top-mount channel 38 antenna is not frequency agile and cannot be re-tuned to new ch 16 assignment. |

**Primary Antenna**

### Other Antenna Costs

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

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

## Primary Antenna

### Other Antenna Cost Not Listed

| Name | Description |
|---|---|
| **Custom Top Plate** | Interface for attachment of new antenna to non-standard tower. Existing antenna also required custom plate. |

## Interim Antenna

### New Antenna Costs

| Section | Question | Response |
|---|---|---|
| **New Antenna Description** | Use | Interim |
| | Description of Use | N/A |
| | Change Type | Rent Temporary |
| | Ownership | Leased |
| | Owner | ERI |
| | Is antenna shared? | No |
| | Is antenna directional? | Yes |
| | Will antenna be located on or in close proximity to an antenna farm? | No |
| **New Antenna Manufacturer and Type** | Class | Full Power |
| | Mounting | Side Mount |
| | Antenna position in stack | Not in Stack |
| | Polarization | Horizontal |
| | 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) | 25.0 kW |
| | Manufacturer | |
| | Model | ATW-2G |
| | Year | 2017 |

| | | |
|---|---|---|
| | Justification for New Antenna | Rental of temporary ch 38 antenna for up to three months to maintain service while existing top-mount antenna and top plate are removed, new top plate and ch 16 antenna installed. |

**Interim Antenna**

### Other Antenna Costs

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

**Interim Antenna**

### Other Antenna Cost Not Listed

Information not provided.

## Transmission Line

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

## Primary Transmission Line

### Existing Transmission Line

| Section | Question | Response |
|---|---|---|
| **Existing Transmission Line Description** | Type of change | Purchase New |
| | Use | Primary (Main) |
| | Description of Use | N/A |
| | Ownership | Owned |
| | Owner | N/A |
| | Site | N/A |
| | Is the existing transmission line shared with another station or stations? | No |
| | Is Transmission Line in operating condition? | Yes |
| **Existing Transmission Line Manufacturer and Type** | Manufacturer | |
| | Type | Rigid |
| | Diameter | 6 1/8 inches |
| | Other Diameter | N/A |
| | Segment Length | 19 1/2 inches |
| | Other Segment Length | N/A |
| | Number of parallel runs | 1 |
| | Length | 1190 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 | 19 3/4 inches |
| | Other Segment Length | N/A |
| | Number of parallel runs | 1 |
| | Length | 1240 feet per run |

| | | |
|---|---|---|
| | Justification for New Transmission Line | Existing line will be used for interim antenna to maintain service on ch38. Existing line dates to 2003, has been repaired and segments replaced. After interim antenna removed, line will be capped for use with a future backup ch16 ant. (not in proposal) |

**Primary Transmission Line**

### Other Transmission Line Expenses Not Listed

| Name | Description |
|---|---|
| **Transmission Line System Design** | Initial system design, plus on-site tech visit for final deliverable |
| **Ice Bridge** | Replacement/additional 150' ice bridge to support and protect new transmission line. Existing bridge is overloaded, in questionable shape and not well-supported. See Site Survey attachment and ERI Transmission Bridge Quote |
| **Line Dehydrator** | Andrew Dryline low-pressure dehydrator for transmission line. |
| **Sweep and Tune** | System sweep, tune and test after installation. |

## 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? | No |
| | Is tower compliant with Rev G? | No |
| **Existing Tower Structure Registration** | Do you have a tower registration number? | Yes |
| | ASR Number | 1054358 |
| **Coordinates (NAD83 ( North American Datum of 1983))** | Latitude (NAD83) | 40° 09' 33.0" N- |
| | Longitude (NAD83) | 082° 55' 23.0" W- |
| | Overall Structure Height | 1106.94 feet |
| | Support Structure Height | 1067.90 feet |
| | Ground Elevation Above Mean Sea Level (AMSL) | 920.92 feet |

| | |
|---|---|
| Structure Type | TOWER - Free Standing or Guyed Structure |
| Tower Owner | OHIO STATE UNIVERSITY DBA = WOSU STATIONS |
| Date Constructed | 01/01/1973 |

**Primary Tower**

### Tower Modification Costs

| Section | Question | Response |
|---|---|---|
| **Engineering Study** | Please what type of engineering study is required, if any: | Study needed for documented tower |
| **Tower Reinforcements** | Please select whether tower reinforcements are needed: | Major 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 |
|---|---|
| **Tower Mapping** | Confirmation mapping to provide current status in preparation of rigorous tower analysis. |

## Outside Professional Services Costs

| Section | Question | Response |
|---|---|---|
| **Outside Project Management Services** | Do you require outside project management services? | Yes |
| | Number of Hours | 150 |
| | Explanation | WOSU only maintains a three-person engineering staff to deal with three television transmitters and six radio stations, as well as all other technology issues in our aging building. We are very tight on staff time, especially for large projects, |
| **Outside RF consulting Engineering Services** | Perform engineering study for new channel assignment and antenna development | Yes |
| | Prepare engineering section of Form FCC Construction Permit Application | Yes |
| | For Auxiliary Facility | 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 |
| **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 | Yes |
| | FAA Consultation (including preparation of FAA Form 7460) | Yes |
| | Negotiation of Lease and other Matter for Shared Locations | No |
| | Prepare or Review FCC Form 399 for Reimbursement | Yes |
| | Address transition timing and coordination issues w/ other stations and wireless providers | No |
| **RF Field Engineering Services** | Comprehensive coverage verification via field study | 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 |
|---|---|
| **Additional Legal Expenses** | Additional expenses for advice and counsel on repack for University-owned public TV station operating "sole service" PBS station in Columbus market. |
| **Quarterly Progress Reports** | Prepare and file FCC-required Quarterly Progress Reports on Schedule 387 during station repack process. |
| **Transmitter Site Site Survey** | Comprehensive transmitter site survey and report by Gates Air specifying needs and providing recommendations (see as attachment) |

## 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 | Yes |
| | 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

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-50** | **$1,047,531.44** | **$1,045,611.44** | | **$0.00** | |
| Exciters | ***$30,000.00*** | $30,000.00 | WOSU currently maintains a two-exciter system with automatic switchover. Current exciters will not work with new transmitter. This request is for a new primary and backup. | N/A | N/A |
| Liquid Cooling System Items | ***$28,651.44*** | $28,651.44 | Items include pump modules, outdoor heat exchangers, plumbing and coolant. These items not included in transmitter estimate. See Gates Air Quote-Form 399 Documentation | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Other -- Building Addition Size: 120.0 | ***$25,000.00*** | $25,000.00 | Approximately 120' sqft space outside building to protect heat exchangers /pumps for new cooling system. Project includes design, pad and ice-protective building overhang. Had estimated $100k, unable to obtain actual quote from university in 5 day window. | N/A | N/A |
| Other Electrical Service: Reworking of existing electrical system to rewire main fused disconnect box to protect new transmitter by on-site generator. New distribution panel to feed power cooling transformer. | ***$25,000.00*** | $25,000.00 | Panel, parts and installations. Unable to provide actual estimates to support higher figure because needs will not be finalized until actual installation. | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| 3" Rigid Conduit and Wiring (Cost per foot) | $2,080.00 | $1,960.00 | N/A | N/A | N/A |
| Transformer 3 phase /480v - 300 KVA | $36,800.00 | $35,000.00 | 480T0208-150KVA-480vv, three phase transformer Delta primary, parallel surge suppressor for Delta, various installation items | N/A | N/A |
| UHF - Liquid Cooled Solid State Transmitter 31.7 kW | ***$900,000.00*** | $900,000.00 | Will include transmitter control, PA power blocks, mask filter system and hardware, plus proof. Does not include exciters. | N/A | N/A |
| **Sub-total** | $1,047,531.44 | $1,045,611.44 | N/A | $0.00 | N/A |
| **Total for all systems** | $2,706,762.44 | $2,481,742.44 | N/A | $30,312.45 | 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 |
|---|---|---|---|---|---|
| **Interim Antenna ATW-2G** | **$138,650.00** | **$32,500.00** | | **$0.00** | |
| UHF - High Power, Side Mount, basic slot antenna, 25 kW input, directional,, horizontally polarized | ***$0.00*** | $0.00 | This is a correct description, however costs reflected in lease numbers listed on this page. | N/A | N/A |
| Side mount brackets for high power antennas (if not included in antenna base cost) | $23,150.00 | $7,500.00 | Lease for use with interim antenna | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Interim antenna rental and installation - Cost will depend on antenna size and height and /or complexity of tower. | $115,500.00 | $25,000.00 | Three-month lease of 25kW side-mount antenna to maintain channel 38 service during installation of new ch 16 antenna and feed line. Cost includes installation, overnight-connection to existing line and removal at end of project. | N/A | N/A |
| **Primary Antenna ATW15H3-HTO-16H** | **$286,030.00** | **$273,100.00** | | **$6,400.00** | |
| Sweep test of existing antenna | $6,730.00 | $6,400.00 | Sweep of the full RF system was included in Gates Air Site Survey (included in attachments). Has already been completed. | $6,400.00 | N/A |
| Custom Top Plate | ***$20,000.00*** | $20,000.00 | To attach new antenna to non-standard tower top. Current antenna also required custom plate. | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed) | $12,300.00 | $11,700.00 | N/A | N/A | N/A |
| UHF - High Power Top Mount (200-1000 kW), One station antenna, horizontally polarized | $247,000.00 | $235,000.00 | N/A | N/A | N/A |
| **Sub-total** | $424,680.00 | $305,600.00 | N/A | $6,400.00 | N/A |
| **Total for all systems** | $2,706,762.44 | $2,481,742.44 | N/A | $30,312.45 | N/A |

### Components

| Actual Information Description | File Name |
|---|---|
| UHF - High Power, Side Mount, basic slot antenna, 25 kW input, directional,, horizontally polarized | Information not provided. |
| Side mount brackets for high power antennas (if not included in antenna base cost) | Information not provided. |
| Interim antenna rental and installation - Cost will depend on antenna size and height and/or complexity of tower. | Information not provided. |

| | | |
|---|---|---|
| Sweep test of existing antenna | **Component Description:**<br><br><br><br><br><br><br><br>**Amount:** | Existing line sweep included as part of site survey invoice without breakdown (site survey was 12,002.45)<br>$6,400.00 |
| Custom Top Plate | Information not provided. | |
| Elbow complex, single channel, at antenna input, per 6 1/8. feedline (if needed) | Information not provided. | |
| UHF - High Power Top Mount (200-1000 kW), One station antenna, horizontally polarized | 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** | **$355,645.00** | **$335,165.00** | | **$0.00** | |
| Sweep and Tune | ***$8,200.00*** | $8,200.00 | Sweep, tune and test, two days mobilization, use of test equipment. | N/A | N/A |
| Line Dehydrator | ***$10,970.00*** | $10,970.00 | Line protection alternative to nitrogen pressure system. | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Ice Bridge | ***$77,245.00*** | $77,245.00 | Materials and installation costs for 150-foot ice /t bridge from transmitter building to tower. Current bridge will not support both new and existing lines. Quote higher than original estimate because estimater used wrong size line. See ERI Bridge Quote. | N/A | N/A |
| Transmission Line System Design | ***$8,750.00*** | $8,750.00 | includes preliminary layout, then site visit for definitive line layout | N/A | N/A |
| Rigid Transmission Line - copper, 6 1/8" | $250,480.00 | $230,000.00 | Full system including hangers, etc. | N/A | N/A |
| **Sub-total** | $355,645.00 | $335,165.00 | N/A | $0.00 | N/A |
| **Total for all systems** | $2,706,762.44 | $2,481,742.44 | N/A | $30,312.45 | 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** | **$647,850.00** | **$611,750.00** | | **$8,250.00** | |
| Structural engineering tower load study for well documented tower | $12,600.00 | $8,000.00 | N/A | $4,500.00 | N/A |
| Tower Mapping | ***$3,750.00*** | $3,750.00 | Tower mapping to confirm status in preparation for structural study. Was completed by George Fitz Antenna Service. | $3,750.00 | For purpose of reimbursement, total only included on invoice component, not with quote or purchase order |
| Tall Tower (greater than 500') | $210,500.00 | $200,000.00 | Mobilization, rigging, removal of current antenna, installation of new antenna and transmission line. Does not include costs for installation and removal of interim antenna. | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Major tower reinforcement /modifications | $421,000.00 | $400,000.00 | Tower structural analysis indicates that reinforcement will be required in at least 12 bays, plus tower base must be reinforced with additional concrete to meet G standards. Does not create additional capacity beyond line and antenna needs for project. | N/A | N/A |
| **Sub-total** | $647,850.00 | $611,750.00 | N/A | $8,250.00 | N/A |
| **Total for all systems** | $2,706,762.44 | $2,481,742.44 | N/A | $30,312.45 | N/A |

## Components

| Actual Information Description | File Name |
|---|---|

| | | |
|---|---|---|
| Structural engineering tower load study for well documented tower | **Component Description:** | Second half of payment for Structural Analysis- PO and proposal already on file |
| | **Amount:** | $2,250.00 |
| | **Component Description:** | Package included initial proposal, purchase order and revised invoice (and explanation of name discrepancy). No dollar amount included here to prevent duplication in total. |
| | **Amount:** | N/A |
| | **Component Description:** | Initial downpayment for WOSU-TV tower analysis |
| | **Amount:** | $2,250.00 |

| | | |
|---|---|---|
| Tower Mapping | **Component Description:**<br><br>**Amount:** | Full cost of initial tower mapping<br>$3,750.00 |
| | **Component Description:**<br><br>**Amount:** | Purchase order for tower mapping. Invoice already on file. Only entering dollar total with invoice so total not duplicated.<br>N/A |
| | **Component Description:**<br><br>**Amount:** | Original quote from Antenna Service Company for tower mapping-PO and invoice on file. Total for reimbursement on invoice.<br>N/A |
| Tall Tower (greater than 500') | Information not provided. | |
| Major tower reinforcement /modifications | 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** | **$167,193.00** | **$119,753.00** | | **$15,662.45** | |
| Transmitter Site Site Survey | ***$12,003.00*** | $12,003.00 | Survey was conducted by Gates Air to inform planning. Total survey cost was $18,403, however $6400 RF sweep was broken out for inclusion in antenna section. | $12,002.45 | N/A |
| Quarterly Progress Reports | ***$5,000.00*** | $5,000.00 | Prepare and file FCC-required Quarterly Progress Reports on Schedule 387 during station repack process. | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Additional Legal Expenses | ***$10,000.00*** | $10,000.00 | Additional legal expenses for advice and counsel on repack transition for University-owned public broadcasting operation providing "sole service" PBS station in Columbus, OH market | N/A | N/A |
| Comprehensive coverage verification via field study, if needed | $84,200.00 | $40,000.00 | N/A | N/A | N/A |
| FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase | $2,105.00 | $2,000.00 | N/A | N/A | N/A |
| Attorney Fees - Prepare and File request for Special Temporary Authorization | $3,680.00 | $3,500.00 | N/A | N/A | N/A |
| Attorney Fees - Prepare and File FCC Form 2100 (main), License to Cover Application | $2,365.00 | $2,250.00 | N/A | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application | $5,260.00 | $5,000.00 | 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 |
| ASR modification (prepare FCC Form 854) | $2,105.00 | $2,000.00 | 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 | $1,575.00 | N/A |
| Perform engineering study for new channel assignment and antenna development | $7,360.00 | $7,000.00 | N/A | $2,085.00 | N/A |
| Prepare and or review reimbursement form | $2,630.00 | $2,500.00 | N/A | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Project management of the transition | $23,700.00 | $22,500.00 | Estimating 150 hours at $150 per hour | N/A | N/A |
| **Sub-total** | $167,193.00 | $119,753.00 | N/A | $15,662.45 | N/A |
| **Total for all systems** | $2,706,762.44 | $2,481,742.44 | N/A | $30,312.45 | N/A |

## Components

| Actual Information Description | File Name | |
|---|---|---|
| Transmitter Site Site Survey | **Component Description:**<br><br>**Amount:** | Additional $6400 in invoice, PO and estimate totals is for existing line sweep<br>$12,002.45 |
| Quarterly Progress Reports | Information not provided. | |
| Additional Legal Expenses | Information not provided. | |
| Comprehensive coverage verification via field study, if needed | Information not provided. | |
| FAA consultant, including cost of preparing FAA Form 7460 (Notice of Proposed Construction), if needed for height increase | Information not provided. | |
| Attorney Fees - Prepare and File request for Special Temporary Authorization | Information not provided. | |
| Attorney Fees -Prepare and File FCC Form 2100 (main), License to Cover Application | Information not provided. | |
| Attorney Fees - Prepare and File FCC Form 2100 (main), Construction Permit Application | Information not provided. | |

| | | |
|---|---|---|
| Prepare engineering section of FCC Form 2100 (main), License to Cover Application | Information not provided. | |
| Prepare request for Special Temporary Authorization | Information not provided. | |
| ASR modification (prepare FCC Form 854) | Information not provided. | |
| Prepare engineering section of FCC Form 2100 (main), Construction Permit Application | **Component Description:**<br><br>**Amount:** | Preparation of initial engineering section of FCC Form 2100: (3) Principal Engineering Hours @ $285/hr (3) Sr. Engineering Hours @ $240/hr<br>$1,575.00 |
| Perform engineering study for new channel assignment and antenna development | **Component Description:**<br><br>**Amount:** | Initial engineering study for new channel assignment: (3) Principal Engineering Hrs @ $285/hr (4.25) Sr. Engineering Hrs @ $240/hr (1) Engineering Hours @ $210/hr<br>$2,085.00 |
| Prepare and or review reimbursement form | Information not provided. | |
| Project management of the transition | 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** | **$63,863.00** | **$63,863.00** | | **$0.00** | |
| MVPD Notification of Channel Change | ***$2,500.00*** | $2,500.00 | N/A | N/A | N/A |
| Develop and air announcement of upcoming channel change | ***$8,000.00*** | $8,000.00 | Including production and broadcast | N/A | N/A |
| Disposal Costs (for equipment and other waste, net of any salvage value) | ***$31,213.00*** | $31,213.00 | Includes decommission and removal of old transmitter from building, removal of transmitter and old antenna from the site. See Gates Air Form 399 Documentation quote. | N/A | N/A |
| Equipment Delivery and Handling Charges | ***$20,000.00*** | $20,000.00 | Shipping, handling and placement. | N/A | N/A |
| Non-zoning permits | ***$1,750.00*** | $1,750.00 | County and State permits and inspections | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Local Zoning | ***$400.00*** | $400.00 | Genoa township zoning (construction) permits and inspections. | N/A | N/A |
| **Sub-total** | $63,863.00 | $63,863.00 | N/A | $0.00 | N/A |
| **Total for all systems** | $2,706,762.44 | $2,481,742.44 | N/A | $30,312.45 | N/A |

### Components

Information not provided.

## Cost Information

### Grand Total

| | Predetermined Cost Estimate | Estimated Cost | Actual Cost |
|---|---|---|---|
| **Total for all systems** | $2,706,762.44 | $2,481,742.44 | $30,312.45 |

## 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.<br>2. The above-named entity acknowledges that all certifications and attached documentation are considered material representations.<br>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. | **Michael Papadakis**<br>*Interim Senior Vice President*<br><br>01/18/2019 |

## 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.<br>2. The above-named entity certifies that the statements in this form and attached documentation are true, complete, and correct.<br>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.<br>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. | **Michael Papadakis**<br>*Interim Senior Vice President*<br><br>01/18/2019 |

## Attachments