



WaterSMART Grants:
Small Scale Water Efficiency
Project FY 2022

Washington Terrace City
Advanced Metering Infrastructure (AMI)
Water Meter Reading System
City Wide



APPLICATE

Washington Terrace City
5249 South 400 East
Washington Terrace City, UT 84405

PROJECT MANGER

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Attachment A – Official Resolution

WTC Culinary Water AMI Antenna Project Small-Scale Water Efficiency Projects FY 2022

1. Executive Summary

Applicant Info

Date: April 5, 2022

Applicant Name: Washington Terrace City

City, County, State: Washington Terrace City, Weber, Utah

Applicant: Category A

Project Manager:

Name: Jake Meibos, Washington Terrace City

Address: 5249 South 400 East, Washington Terrace City, 84405

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Project Funding Request: Small Scale Water Efficiency Projects- Total Cost \$241,440

Project Summary

A one paragraph project summary that specifies the work proposed, including how project funds will be used to accomplish specific project activities and briefly identifies how the proposed project contributes to accomplishing the goals of this FOA

Washington Terrace city proposes to complete a phase of the ongoing effort to install an Automatic Metering Infrastructure (AMI) throughout the entirety of the city. The proposed project includes installation of 1500 Single-Port Pit-Lid Radio's, which represents a portion of the culinary water meters in Washington Terrace City. The project will better manage the cities water supplies, promote conservation among its residential customers, commercial customers, and industrial customers and automate its meter readings. This project supports Washington Terrace City to move toward accomplishing certain goals and priorities set forth in the Washington Terrace City Water Conservation Plan adopted in 2021.

Schedule

The length of time and estimated completion date for the proposed project

This project installation will begin in November of 2022 and will continue through December of 2024. The ideal time for installing Radios is during the spring, summer, and fall months when the existing meters are not covered in snow. The meter radios will be installed by the Washington Terrace City Public Works department staff. All components of the project will be completed within the two-year allowance.

Federal Facility

Whether or not the project is located on a Federal Facility

The City of Washington Terrace was founded and developed in 1948 from a war-time housing project and occupies an area of approximately 1.9 square miles. The water system consists of conveyance pipes, water storage tanks, and pressure reducing stations. Data collected for the Culinary Water Master Plan & Impact Fee Study completed October 2010 by Jones and Associates, Consulting Engineers showed that the City has sufficient water supply for its current needs and has the ability to meet existing water demand on the highest day of peak use (peak day demand)

2. Background Data

Project Location

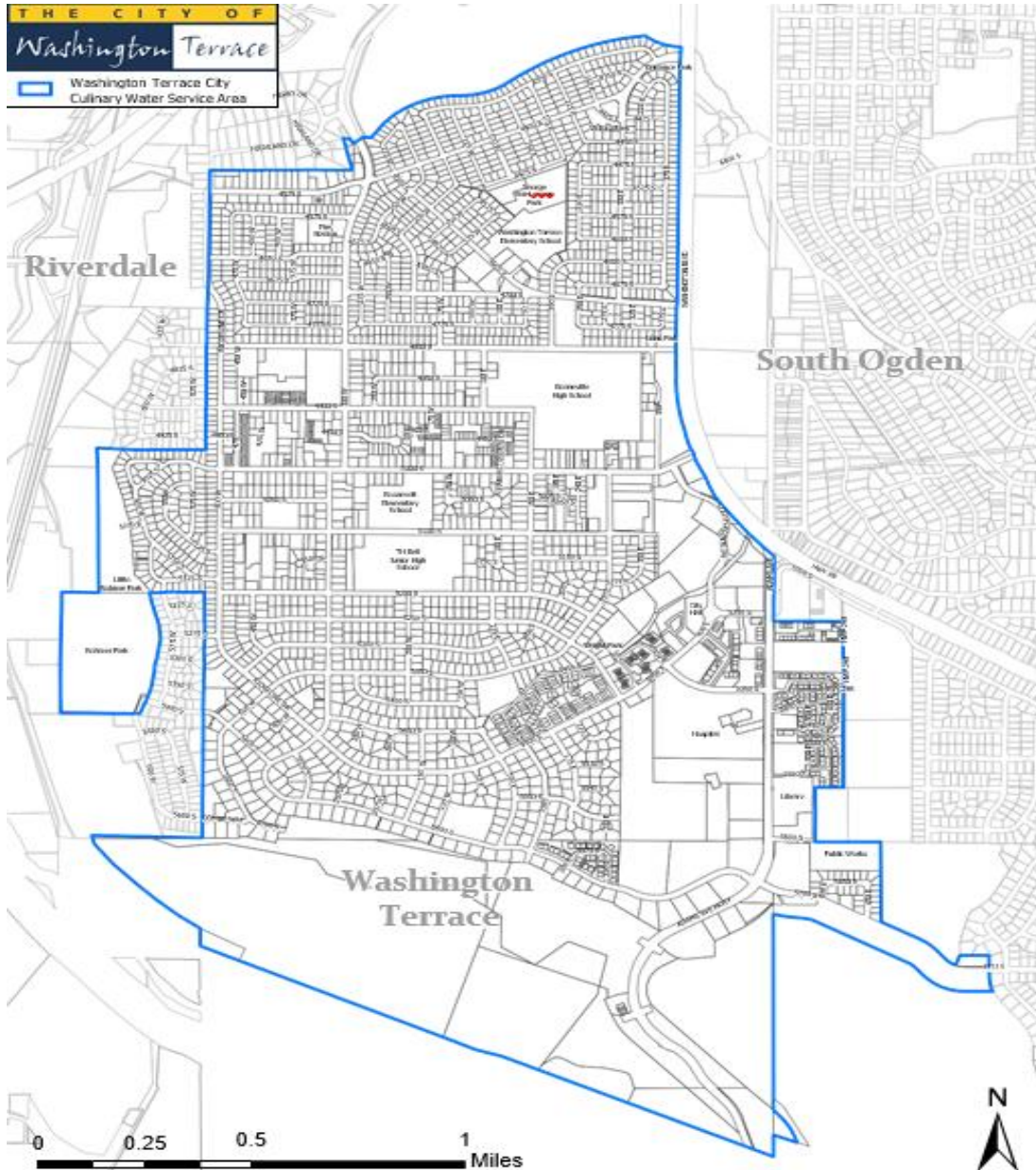
Washington Terrace City located on the south side of Weber County Utah. The neighboring cities are South Ogden City and Riverdale City. The culinary water meter radio's will be installed on residential and commercial meters throughout the city's water system.

The City of Washington Terrace system #UTAH 29022 currently provides culinary water to approximately 9,162 people (City estimate) within the corporate boundaries of the City through 3220 connections. This water is intended for indoor or sanitary uses. The water system provides water to approximately 3083 residential and 94 commercial and 43 institutional connections at this time. Secondary water is supplied to the City's residents by Pineview Water for the service area roughly north of 5200 South and Weber Basin Water Conservation District for the service area roughly south of 5200 South. This water is intended for outdoor and/or landscaping needs.

Two wells located in Washington Terrace were used to provide the City's water in the past. They were taken off-line due to excessive costs of running the wells versus purchasing water from 2 Weber Basin. Water quality and quantity in the wells are excellent and the City has negotiated an agreement with Weber Basin for use of the water in their area-wide distribution system. Culinary water for future City residents will continue to come from Weber Basin Water Conservancy District. The amount of water contracted from Weber Basin (1,000 acre-feet annually) is a safe yield and in past years the City has not used all the allotment.

The map labeled Map 1 shows the boundaries of or water distribution system.

Map 1



3. Technical Project Description

Washington Terrace City proposes to complete a phase of its effort to read all 3220 connections by Advanced Metering Infrastructure (AMI) radio. The proposed project includes 1500 AMI radio antennas to be installed on selected water meters throughout the city. The AMI radios are designed to collect the water flow data through the water meter and distribute that data to a transmitting tower and transmitted to the city analytics software system.

Washington Terrace City has developed an interlocal agreement with WBWCD for the use of their transmitting base station tower. WBWCD fully supports the AMI radio project for water conservation purposes.

After installation of the AMI radios, flow data will be collected hourly and made available to the city staff and users in real time. This data will be very helpful for the city in understanding peak day water use and encouraging water conservation with its customers. After installation Washington Terrace

City can also develop an online portal that serves as a tool for the end users to be able to track and be accountable for their own water use. The intent of the portal is to provide the end users with enough data to allow for them to be better water managers. The portal shows each end users water use to date and parcel allocation. The water use to date can be seen in hourly, daily, monthly, and yearly increments of use, in addition the end user can do monthly comparisons year to year. Also, in the portal, the end user can set up notifications to alerts them if there is a leak (if water flows through a meter for more than a user specified period of time amount of hours) or notify if volume thresholds have been exceeded.

Content and form of Application Submission.

The City was required to submit a single Audit Report for Fiscal Year 2021. The EIN number associated with this report is 87-6113226, and is available through the Federal Audit Clearinghouse website

4. Evaluation Criteria

Evaluation Criterion A- Project Benefits

Describe the expected benefits and outcomes of implementing the proposed project.

What are the benefits to the applicant's water supply delivery system? The proposed project will provide many benefits to Washington Terrace Cities culinary water system. These include providing hourly data that is highly instrumental in assisting Washington Terrace City implement conservation programs, providing educational opportunities to the end users, and allowing Washington Terrace City to better manage the water resources within their service area.

Upgrading the meter read software will give Washington Terrace City better water usage information. We will be able to get the information on a zone-by-zone basis or even a street-by-street basis. The info can be used to notify customers of potential leaks they may have. The new systems also give consumers the ability to see their daily water usage from their home, giving them the information, they may need to help them conserve water.

Additional Benefits:

- Delivers a fast, efficient, reliable connection
- Minimizes new infrastructure investment
- Enables effective leak detection
- Allows extraction of usage profiles to inform customers and resolve dispute
- Offers highly flexible data collection options
- Delivers immediate access to information without having to wait until the next scheduled data transmission

Extent to which the proposed project improves overall water supply reliability:

As demands due to new growth, development and redevelopment have increased in areas served by the WBWCD, peak flows have increased. As the areas served by the WBWCD continue to grow rapidly, WBWCD expects additional demand for both secondary and potable water in the south Weber County area. Currently the capacity of the WBWCD is a limiting factor in providing water during peak summer demands. Another concern for the south Weber County area water supply is the declining groundwater levels. This will likely limit significant future groundwater development in the area and may result in pumping reductions to existing water wells. The challenge's that WBWCD faces area a direct impact to Washington Terrace City. The restriction WBWCD has put in place will reduce the current contracted wholes sale water amount that Washington Terrace purchases from WBWCD each year.

Drought and overwatering are other issues impacting the water reliability in the proposed project service area. drought has affected many areas in the state of Utah and has significantly impacted the availability of water for the retail users. Regardless of drought and other water reliability/water quality issues that may occur within the delivery system, water users are over watering, and are not being conscientious of their water use habits that could be better managed to prepare for the drought years and future water demands.

The project will directly address a heightened competition for finite water supplies and over allocation by conserving water that will be banked and used for future growth needs, to supply new connections and future demand needs within Washington Terrace City service area.

Washington terrace City plans to address the water reliability concerns outlined above by installing AMI radios with the water meters and implementing water awareness education. The proposed AMI radio metering project will increase the water supply reliability in three ways:

1. Decreased culinary water use in the system's area will result in less water needing to be conveyed through the water system, which will result in less culinary water usage.
2. Decreased culinary water use in the Washington Terrace City area will allow WBWCD to decrease pumping of culinary water wells in the area during off-peak times. This will have a positive impact on groundwater levels, which are a significant issue in the area.
3. Decrease the amount of culinary water conveyed through the South Ogden wheeling agreement. The water conveyed through South Ogden is purchased at a premium rate.

Water conserved through this project will be used for future growth needs and to supply new connections and future demand needs within Washington Terrace City. It is also possible that saved water could go to meet the needs of other areas in WBWCD.

The expected geographic scope benefits from the proposed project: Washington Terrace City retail water system consist of approx. 30 miles of main line piping infrastructure, 3,083 residential, commercial, and industrial connections. The proposed project will have a positive impact on water supplies for this entire area that currently has a population of approx. 9,050 residents.

Extent to which the proposed project will increase collaboration and information sharing among water managers in the region: This project will allow for the sharing of water use data including annual use, peak day demands etc. with entities across Weber County, the state of Utah and the region.

The proposed project will provide another opportunity to continue to collaborate with WBWCD to promote conservation and to develop a more reliable water supply. The Utah Division of Water Resources (DWR) and WBWCD recognizes the importance of water conservation and the water saved through this improvement project. They have always supported projects such as this through matching loans and planning grants to water districts, municipalities, and irrigators. WBWCD continues to be a valuable partner promoting wise water use in our state and community, as well as being partners in the Governor's Water Conservation Team and the Slow the Flow campaign.

This project will also increase water use awareness among residential and commercial water users in a way that could not be achieved in any other way. Washington Terrace City believes that this project, along with other conservation goals and activities will help prevent a water-related crisis or conflict. It will provide available more water for future needs and growth which is projected to double along the Wasatch Front by 2060. The project will also allow for discussions to be had amongst land planners and end users related to sustainable practices that can be implemented supported by data. The future customers in Washington Terrace City service area can be more aware of their water use, and it will be easier to help them reduce if they fall into a category of excessive use.

Any anticipated positive impacts/benefits to residents, commercial, industrial users, and economies: A benefit that this project will provide for the local economy will be in increasing the reliability of the local water supply. Washington Terrace City serves a geographic area of approx. 1.9 square miles. Municipal use includes indoor use and outdoor use. Considering its geographical area, Washington Terrace City supplies culinary water to multiple recreation sites, such as city parks, open spaces, and other recreational and educational centers. All sites and facilities receiving an AMI radio connection will be able to use collected meter data to better understand how they can reduce water usage and contribute to greater water supply reliability.

Evaluation Criterion B- Planning Efforts Supporting the Project

Describe how your project is supported by an existing planning effort.

Does the proposed project implement a goal or address a need or problem identified in the existing planning effort? Washington Terrace City has a Water Conservation Plan that was implemented and updated in 2021. Washington Terrace City has also completed a Capital Improvement Plan (CIP)) for an overall planning and projecting future infrastructure projects and water needs and demands. This plan allows the city to create a better understanding of the impact of drought and strategies to plan for sustainable water demands and water supplies as they continue to change.

Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures. Washington Terrace City System Optimization Review has identified that installing AMI Radios as a top priority. This application addresses AMI Radio project. Washington Terrace City has also developed a water conservation plan that has AMI Radios as one of the priority items listed. AMI Radios fits into conservation as well as water management plans that will assist Washington Terrace City in accounting for current water use while planning how to meet the needs of future demands. With the development of the AMI Radio project, Washington Terrace City will be able to continue their goals of the water conservation plan. In the most recent study, the Water Conservation and Management Plan, indicates that AMI Radio meter reading is vital in efficiently and effectively conserving water.

Evaluation Criterion C- Project Implementation

Describe the implementation plan for the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates: The schedule provided below outlines timing of the major tasks and milestones for the proposed project. Before any work can begin on the project, an interlocal agreement with WBWCD will be agreed and signed. Once this is complete, the installation of the AMI Radios can begin. It is anticipated that the AMI Radios will be ordered the summer of 2022 and delivered by 2023. Installation will take place thru 2023 and into 2024.

SCHEDULE	Sept –Dec 2022	June- July 2022	Nov-2022	Dec - 2024	Dec - 2023	Jan - 2024
Sign WaterSMART contracts						
Interlocal Agreement with WBWCD						
AMI Radio Project Installation						
Final reporting and project close-out						

Describe any permits that will be required, along with the process for obtaining such permits: WBWCD will be involved in making the transition and uploading the data to their transmitting towers. There are no additional permits or commutation with another agency that needs to take place.

Identify and describe any engineering or design work performed specifically in support of the proposed project. Washington Terrace has completed multiple culinary water meter installation projects and the components of a water meter. Through this effort standard drawings and specifications have been developed by staff to facilitate this effort. In the event any additional details are needed City staff will be used to complete said work.

Describe any new policies or administrative actions required to implement the project. No new policies will be required to implement this project.

Evaluation Criterion D- Nexus to Reclamation

How is the proposed project connected to a Reclamation project or activity? The proposed project will be performed within Washington Terrace City boundaries, it will therefore benefit the City and Reclamation through better management of water resources and reduce overall demand that is increasing with a growing population throughout the entire Reclamation project.

Will the project help Reclamation meet trust responsibilities to any tribe(s)? The proposed project will not benefit any tribes.

Does the applicant receive Reclamation project water? Yes, 100% of the culinary water for Washington Terrace City is purchased from WBWCD. Weber Basin is the central entity for Reclamation Project water for the entire region.

Is the project on Reclamation project lands or involving Reclamation facilities? The AMI Radio project will not take place on Reclamation project lands but could influence Reclamation

facilities due to the decrease in water needed over the long term. Reduced usage equates to an increase in storage, an increase in water marketing, a decrease in pumping, and a reduced cost when upsizing and improving existing infrastructure to carry additional water to meet future demands.

Is the project in the same basin as a Reclamation project or activity? No, currently there is not a Reclamation Project in Washington Terrace City.

Evaluation Criterion E- Department of Interior Priorities

Following are DOI priorities that are addressed as part of this project:

- 1. Working to conserve at least 30% each of our lands and waters by 2030***– We will work together to protect biodiversity, slow extinction rates, and help leverage climate solutions by conserving 30% of America’s lands and waters by 2030. On the topic of conversation, WBWCD is consistently gathering data and analyzing that data to develop a Water Conservation Plan and Drought Response Plan. WBWCD has shared that information with the entities it serves in their district. Washington Terrace City has created a Water Conservation Plan using data from the system and data that reflects the water WBWCD’s conservation plan. This project will support the capacity of the existing infrastructure by reducing the demand on the system.

Washington Terrace will take a major step towards ensuring water availability and reliability for current and future generations by not only metering its culinary water distribution, but by the ability of the AMI Radio system and educating its users of their water usage daily if needed. Washington Terrace directly plays an active role in helping water users to understand how to conserve water inside the home, by means of their information brochures and water conservation tip posted on the city website. Washington Terrace also has a great partnership with WBWCD for additional water conservation information and strategies.

Attention to water conservation is most prevalent in the western United States, and especially in Utah – the second driest state in the nation. Because of our semi-arid climate and drought, water conservation in Utah is something that is taken seriously by water distributors and users throughout the state. Washington Terrace City utilizes research and science to identify best practices to manage land and water resources and adapt changes to the environment, such as the proposed AMI Radio water meters that will actively be used to reduce the disastrous effects of drought. The proposed project is an opportunity for Washington Terrace City to work together to create goals and sound

water use habits. Working towards these goals and implementing better water use habits will protect Utah's water resources and ensure that these resources are made available to sustain current and future water users within the Washington Terrace City service area.

2. ***Restoring Trust with Local Communities-*** As Washington Terrace City works with the water users located within their service areas to address water supply reliability, they work to build trust with water users city jurisdiction. Building trust through education, conservation, and accountability, Washington Terrace City will help its water users better manage their water use habits. Washington Terrace City helps its water users make conservation easier is by providing educational information and tip for inside and outside the home water usage.
3. ***Striking a Regulatory Balance-*** The proposed project will better manage the water resources within the Washington Terrace Project and will thus reduce the burden on the public and administration by providing a better water use data to Washington Terrace as well as its retail end users.
4. ***Modernizing our infrastructure-*** The installation of AMI Radios to the culinary water meters supports our Water Conservation Plan and the Capital Improvement Plan (CIP). Currently, the water users and the city have to wait until the monthly water meter reading are gathered to obtain the water use information for that month. for example, if there was leak on the user side of the meter no one would receive that information until the meters are read and the information have been analyzed. Improving our meter reading system with AMI Radio reading will provide real time water usage information to the water users and to the city. Water usage will be better managed, and leaks can be detected much soon. Detecting water leaks sooner will reduce the city water lose and water user will be able to eliminate the leak before a costly water bill. Washington Terrace City is working to educate users regarding the finite resource water is and to reduce their water usage by utilizing modern AMI Radio technologies and digital education platforms.
5. ***Disadvantage or underserved Community-*** This project will server and benefit the entire community of Washington Terrace City by helping to receive data that can determine water leaks in real time, and thus altering the resident of the problem before a utility bill could potentially become quite costly. Using American Community Survey (ACS) data, the Department of Housing and Urban Development has determined the City of Washington Terrace (population 9248) currently has a Low to Moderate Income (LMI) percentage of 56.12.

5. Environmental and Cultural Resources Compliance

1. Will the project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

The project will not impact the surrounding environment. Since all work will be completed within existing vaults and or water meter pits, there is no excavation, earthwork, or other physical impacts. No animal habitats will be negatively impacted.

2. Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

No endangered species are impacted by this project.

3. Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "waters of the United States?" If so, please describe and estimate any impacts the project may have.

This project will not affect or have any impact on any wetland areas.

4. When was the water delivery system constructed?

The original culinary water system project began in the 1940's and continued over a several years. Since then, additional infrastructure such as potable pipelines, water storage tanks have been added to meet the growing population water needs.

5. Will the project result in any modification of or effects to, individual features of a culinary water system (e.g., pipes, PRV stations, or storage tanks)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

No, there will be no major modifications to the Cities culinary water system.

6. Are any buildings, structures, or features in the Cities water system listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

No, Washington Terrace City is not aware of any buildings, structures or features that would be impacted or would qualify.

7. Are there any known archeological sites in the proposed project area?

No, Washington Terrace City is not aware of any archeological sites in the proposed project area.

8. Will the project have a disproportionately high and adverse effect on low income or minority populations?

No.

9. Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

No.

10. Will the project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

No.

6. Required Permits and Approvals

There are no required permit or approval needed for this project. Although, WBWCD will be involved and notified at the time of the AMI installation. Any concerns they have will also be addressed prior to the construction.

7. Official Resolution

An official resolution is attached as Attachment C.

8. Project Budget

Funding Plan and Letters of Commitment

1. How you will make your contribution to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).

The City will fund all non-Federal contributions entirely with Washington Terrace City operating revenues.

2. Describe any in-kind costs incurred before the anticipated project start date that you seek to include as project costs. Include:

N/A

3. Describe any funding requested or received from other Federal partners. Note: other sources of Federal funding may not be counted towards the cost share unless otherwise allowed by statute.

N/A

6. Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.

N/A

FUNDING SOURCES	FUNDING AMOUNT
Non-Federal Entities	\$141,440.000
Non-Federal Subtotal	\$141,440.00
Other Federal Subtotal	\$0.00
Total Project Funding	\$241,440.00

FUNDING SOURCES	% of Total Project Cost	Total Cost by Source
Recipient Funding	50%	\$141,440.00
Reclamation Funding	50%	\$100,000
Other Federal Funding	0%	\$0.00
Totals	100%	\$241,440.00

Budget Proposal

Budget Item Description	Computation		Quantity Type	Total Cost
	\$/Unit	Quantity		
Salaries & Wages	\$0.00	-	-	\$0.00
Fringe Benefits	\$0.00	-	-	\$0.00
Travel	\$0.00	-	-	\$0.00

Equipment	\$0.00	-	-	\$0.00
Supplies and materials	\$0.00	-	-	\$0.00
Contractual /Construction				
AMI Radio Antenna	\$159.49	1500	EA	\$239,235.00
Wire Connectors	\$.49	4500	EA	\$2,205.00
Other				
	\$0.00		EA	
Total Direct Costs				\$241,440.00
Indirect Costs	\$0.00	-	-	\$0.00
Total Project Costs				\$241,440.00

[Budget Narrative](#)

[Salaries & Wages](#)

No Washington Terrace City Salaries or Wages will be included. Washington Terrace City’s staff time will be over and above the cost of the project and will not be counted toward the project cost.

[Fringe Benefits](#)

No fringe benefits will be required.

[Travel](#)

No travel will be required.

[Equipment](#)

Equipment is included as a cost in the Contractual /Construction portion of the project. Equipment will be procured by the city.

[Materials and Supplies](#)

Materials and Supplies is included as a cost in the Contractual /Construction portion of the project and will be documented as required.

[Contractual /Construction](#)

In order to determine unit costs which were included in the cost estimate for this project, Washington Terrace has requested a quote from the AMI Radio supplier for the cost information for the equipment, materials and supplies required.

[Environmental and Regulatory Compliance Costs](#)

No environmental document needed for this project.

Reporting

Washington Terrace City's staff time to prepare the reports will be over and above the cost of the project and will not be counted toward the project cost.

Other Expenses

No other expenses will be part of the project.

Indirect Costs

No indirect costs will be part of the project.

Total Costs

Washington Terrace Portion	Fed Portion	Total
\$141,440.00	\$100,000.00	\$241,440.00

9. Unique Entity Identifier and System Award for Management

Be Registered in the System Award Management (SAM) before submitting its application:

Yes. SAM DUNS Number: VPV6GB45M5K8