WaterSMART Grants: Small-Scale Water Efficiency Projects for Fiscal Year 2019

Bureau of Reclamation- FOA No. BOR-DO-19-F005

Bountiful Irrigation District

Secondary Water System Metering Project

April 24, 2019

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Applicant Information

Date: April 24, 2019
Applicant Name: Bountiful Irrigation District (District)
City, County, State: Bountiful City, Davis County, Utah
Requested Reclamation Funding: $75,000; **Total Project Costs:** $150,000

Project Summary

Specify the work proposed, including how funds will be used to accomplish specific project activities. Briefly identify how the proposed project contributes to accomplishing the goals of this FOA.

Bountiful Irrigation District's Secondary Water System Metering Project will include the installation of 55 secondary water meters ranging in size from 1-inch to 6-inch. The meters will be installed on some of the District's largest water users, which include multiple high schools, jr. high schools, and elementary schools, a recreation center, a large community park, a golf course, and large property owners. These water users have been known to use more than their allotted share of water because of an inability to understand the amount they use. The project will contribute to accomplishing the goals of this FOA in the following ways:

- Better management of the District's water resources by educating all types of secondary water users on their water usage beyond that of their allotted use. Large water users are allotted 2.9 acre-feet of water per acre per year. The District seeks to better allocate a limited water supply caused by drought and overwatering of school, recreational, residential, and large property owner lawns, gardens, and crops.
- Promote conservation and allow the District to better plan for growth and drought. The District has implemented policies requiring that all new secondary water connections be metered, and this project is the first phase of the District's desire to meter all existing connections.

A combination of Reclamation funds and District cash will be used to purchase the meters. $5,000 has been set aside for the District to prepare the Environmental document. The remaining District non-federal match will be in the form of in-kind services using its own employees and equipment to install the proposed meters.

Length of Time

State the length of time and estimated completion date for the proposed project.

Bountiful Irrigation District, "the District," is prepared to move forward with the Project as soon as funds are awarded. The District anticipates that the contract with Reclamation will be signed

between September 2019 and April 2020. The District anticipates that the environmental will be a categorical exclusion and will take between two to four months to complete; April 2020 to July 2020. The District plans to install the meters themselves, so no project coordination and bidding is required. The Installation of the proposed secondary water meters will take approximately three to six months to complete and installation will take place outside of irrigation season between October 2020 and April 2021. The project will be completed within the two year requirement.

Federal Facility

Is the proposed project located on a Federal facility?

The Project is not directly located on a Federal facility; however, the District receives its water from Weber Basin Water Conservancy District (WBWCD), which is a Reclamation project.

Background Data

Bountiful Irrigation District was organized in 1954, known then as the Bountiful Water Sub-Conservancy District, to manage the pressurized irrigation system, which delivers water to the Bountiful area from WBWCD, through the Davis Aqueduct. The name was changed to Bountiful Irrigation District in 2008. In 2009, the District completed construction of a new office and warehouse complex located at 995 South 500 West, which replaced the previous office located at 385 West 500 South. The previous facility and land were sold to help pay for the new buildings.

Figure 1 – Bountiful Irrigation District Office

The District has been a vital contributor to southern Davis County for the past sixty years by delivering irrigation (secondary) water to farmers and residents in the Bountiful area. The District has always sought to improve performance and efficiency, and has consistently achieved its goal of excellent customer service.

Bountiful is a city in Davis County, Utah. According to the most recent United States census estimates, Bountiful's population is 44,107. The City grew rapidly during the suburb growth of the late 1940s, 1950s, and 1960s. Today, Bountiful City is near its buildout capacity of about 95 percent. The City's current focus is on preserving its property values and encouraging reinvestment. The City also seeks to maintain and improve its housing, land use, infrastructure, downtown, and recreation; replacing the old with the new and encouraging its residents to better utilize City resources, especially when it comes to its most valuable resource; water.

Bountiful is Utah's fifteenth largest city. The original portion of the City and downtown are located at the base of the Wasatch Range, which rises high to the east, overlooking the City.

Most of the residential neighborhoods climb high up the slopes of the mountain, where inhabitants gaze down upon the City of Bountiful. The City's mission is to create and maintain a great community to ensure that Bountiful City will always be the "City of Beautiful Homes and Gardens."

Bountiful City's water system began in 1906 and it has increased in capacity until today, most of the water of the mountain streams goes into City reservoirs.

Source of water supply

The District's primary source of water supply is delivered by WBWCD via the Davis Aqueduct, which receives its water from several reservoirs located in Weber, Morgan, Summit, and Box Elder Counties.

Total quantity of water supply managed and supplied

Bountiful Irrigation has a contract with WBWCD for 17,500 acre-feet of water annually.

Water rights involved

The District sold their water rights to WBWCD and now purchases water directly from them.

Current water uses (i.e., agricultural, municipal, domestic, or industrial)

Current water uses include municipal, agricultural, and commercial.

Number of water users served

The District has 12,000 connections serving Bountiful City. The population served is 44,107.

Current and projected water demand

Current water demand is 11,000 acre-feet per year with little projected water demand considering that Bountiful City is about 95 percent built out. The District's focus now is on better management and conservation of its current water resources.

If water is primarily used for irrigation, describe major crops and total acres served

Current District water use is primarily for municipal lawn and garden use; however, there is one farmer, Bangerter Produce, who grows zucchini, peppers, corn, beats, and beans on 20 acres. This farmer's parcel is being metered as part of the Project, found on Attachment A – BID Meter Locations Map.

Potential shortfalls in water supply

Potential shortfalls in the water supply include loss of water due to drought conditions and water overuse. Large water users and residents in Bountiful City are using too much water, limiting the District's water supply. Large water users are asked to only use 2.9 acre-feet of water per acre per year, but they are using way more than this. If the proposed meters are not installed on large and residential water user secondary water connections, the District's water supply will become even more limited and unable to sustain Bountiful City's current population. Metering all types of water users will mitigate this potential shortfall by providing the data needed to better understand large and residential water use, and how they can work with the District to conserve valuable water resources, making it more readily available for all.

Describe the applicant's water delivery or distribution system, as appropriate. For agricultural systems, please include the types and approximate total lengths of canals and laterals (e.g., unlined or lined open channel, pipe, including types of pipe and lining materials), the number of irrigation turnouts and other significant existing irrigation improvements (e.g., automated control structures, remote monitoring devices and SCADA systems). For municipal systems, include the total approximate length of distribution lines, number of sizes of storage tanks, number of pump stations and capacities, and the number of connections and/or number of water users served and any other relevant information describing the system.

The District has 250 miles of pipeline, 8 reservoirs that hold 18 acre-feet of water each, and 4 pump stations that can pump up to 9 feet of water per second. The District has 12,000 connections serving a population of over 40,000. Bountiful City is currently about 95 percent built out.

Figure 2 – Reservoir in Bountiful, Utah

Identify any past working relationships with Reclamation, including date(s), description of the relationship(s) with Reclamation, and a description of the project(s).

In 1953, The District had a loan with Reclamation for $3M to put in their secondary water system. Also, about 20 years ago, the District had a Reclamation planning grant for $25,000 for a water conservation plan.

Project Location

Provide specific information on the proposed project location or project area including a map showing the geographic location.

The Project takes place within the District's serve area – outlined on Attachment B – BID Boundary Map. The District's service area is Bountiful City in Davis County, Utah. Meters will be installed at the following locations in Bountiful City:

- *Bountiful High School (40°52'55.27" N, 111°52'11.74" W)*
- *Viewmont High School (40°54'02.13" N, 111°52'57.96" W)*
- *Woods Cross High School (40°52'05.69" N, 111°53'42.61" W)*
- *Bountiful Jr High School and South Davis Rec. Center (40°53'39.97" N, 111°52'55.39" W)*
- *Bountiful Ridge Golf Course (40°51'47.72" N, 111°51'15.38" W)*
- *Dave Wright Property (40°53'00.63", 111°51'40.16" W)*

- *Bangerter Property (40°54'13.87" N, 111°52'09.68" W)*
- Meadowbrook Elementary *(40°53'47.64", 111°53'19.79" W)*
- Holbrook Elementary *(40°53'30.05", 111°51'37.81" W)*
- Rocket Park *(40°53'33.87", 111°51'14.60" W)*
- Mueller Park Jr. High School *(40°52'20.58", 111°51'40.27" W)*
- Foss Lewis Residential Subdivision (40°51'28.12", 111°52'26.18" W)

Maps of these locations are found on Attachment A – BID Meter Locations Maps, which also detail meter sizes and where meters will be installed.

Technical Project Description and Milestones

Describe the work in detail, including specific activities that will be accomplished. The description shall have sufficient detail to permit a comprehensive evaluation of the proposal. Include milestones for the completion of the project, including, but not limited to, environmental compliance, permitting, final design, and construction. If non-Federal cost share is not yet secured, the milestones should identify when the applicant anticipates that the funds will be available.

Problems and needs

The District's Water Supply has been reduced due to the effects of drought and overwatering by large water users, such as golf course, recreation center, schools, parks, and large property owners. The District is also concerned that many of its residents are using too much water on their lawns and gardens. However, the District does not have the means by which to help their water users know what their real water usage is. In order to conserve water to better meet current water demands, the District needs to begin installing meters on large commercial and residential user's secondary water connections within its service area. Many water districts and companies throughout the state of Utah are installing secondary water meters due to an increasing need for water conservation and to educate secondary water user on their water use. This critical conservation measure has become the norm, and the District seeks to follow suit, beginning with its largest water users. Doing so will provide the District with information and data to help promote and implement better water management practices. It will help to resolve concerns among residents who are concerned that large water users and their neighbors are using too much water on their landscapes. It is important that the District and all of its water users hold themselves accountable for their water use and that they do their part in contributing to the District's, WBWCD's, and the State of Utah's shared water conservation goals.

Figure 3 – Residential Subdivision in Bountiful, Utah

How the project is intended to address the problems and needs

The Project will begin to address the problems and needs outlined above by installing 55 secondary water meters ranging in size from 1-inch to 6-inch on existing large water user and residential connections listed previously. Data acquired from meters will be used to show water users how much they are actually using and how much they should be using. This will help educate and promote water use accountability among these users and to encourage better water management practices. Providing water use data to all types of secondary water users will be the most important step in realizing actual water savings by encouraging a more efficient use of District water resources that will ensure a more reliable source of water for years to come.

Expected outcomes

The expected outcomes of the Project are as follows:

- **Educated Large and Residential Water Users –**
    - Produce significant reductions in secondary irrigation water usage by putting a larger incentive on large and residential water users to start saving.
    - The water savings realized from these metered connections will improve water levels in several reservoirs that supply water to WBWCD, and by extension, Bountiful Irrigation District.
- **Increased Water Storage –**
    - Allow larger amounts of water to be held in the reservoirs for longer periods of time. Conserving water in this way will ensure a more reliable source of water, balancing school, recreational, and large property owner needs with that of its residential needs and the natural environment.
    - Conserving water will keep the vibrant community of Bountiful alive and allow it to prosper for many more years to come.

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?*

  As secondary water connections are metered:
    - **Large and residential water users will be educated, aligning with WBWCD's goal to provide informative usage reports to water users.**

- A larger incentive to save the District's valuable water resources will be placed upon school, recreational, residential, and large property secondary water users in the District's service area. The data provided by the proposed secondary water meters will be an important tool in helping the District and its water users understand how much water they are really using and how much they should be using. For example, large water users are limited to 2.9 acre-feet of water per acre per year, but many are using way more than they are paying for, leaving residential lawns and gardens with an unfair allocation of secondary water. The only way to track large water user water usage is to install the proposed meters. Secondary Water Metering is listed in WBWCD's Drought Contingency Plan as number three on their Top 10 Mitigation Measures. Because the District receives their water from WBWCD, their efforts to educate their water users will directly impact WBWCD's water supply.

Figure 4 – Bountiful Ridge Golf Course in Bountiful, Utah

- **Greater District water savings and increased WBWCD water storage will be realized.**
  - Through metered secondary water connections and water use education, greater water savings for the District will be realized. This will allow the District's water supply delivery system to be able to stretch the water further into the irrigation season and allow the water to be held up in WBWCD's reservoirs for longer in the season. This will provide a more balanced allocation of water among different types of secondary water users in the District's service area, and increase water storage volumes for WBWCD – one of the key objectives in their Drought Contingency Plan.
- **The burden of drought on the District's secondary water delivery system and WBWCD's valuable water supply will be lessened.**
  - One of WBWCD's top Key Drought Vulnerabilities listed in their Drought Contingency Plan is "Wasteful Watering." The mitigation measure linked to this vulnerability is to install secondary water meters and to educate water users on their usage. The effects of drought on the District's secondary water delivery system and WBWCD's valuable water supply, though inevitable, will be less of a burden as Bountiful Irrigation District and its water users work together to understand and better manage their valuable water supply, based on the information provided them from the new secondary water meters.

- *If other benefits are expected explain those as well. Consider the following:*
  - *Extent to which the proposed project improves overall water supply reliability*

    This is the first phase of the proposed metering project, and is an opportunity for the District to understand how implementing this type of water supply reliability will benefit all users along their entire system. As metering is introduced and better management practices are implemented, the District's entire delivery system will improve, increasing their service area's drought resiliency and the impact they have on WBWCD water. The District's service area is near its buildout capacity, and they are going through a gentrification process that is changing commercial areas into residential. More residential areas mean more water users, and it is important that the District understands how it can educate their water users before these changes happen.

  - *The expected geographic scope benefits from the proposed project (e.g., local, sub-basin, basin)*

    The Project will begin to conserve water that will stay in the Weber River and reservoirs that supply water to the WBWCD, and by extension, Bountiful Irrigation District; improving the water supply in the Weber Basin Drainage. Over time, the installation of more meters in the District's service area could potentially contribute to the Weber River and the many reservoirs that supply water to WBWCD.

  - *Extent to which the proposed project will increase collaboration and information sharing among water managers in the region*

    This project has already increased collaboration and information sharing as the District has worked closely with WBWCD to better understand the impact that metering secondary water connections can have on its users. The District has had many conversations and attended workshops that have allowed them to educate themselves on the impact that meters can have when people are self-aware of how much water they are really using to water their lawns and gardens. As the District has spoken with other secondary water providers who have begun to implement secondary water meters, they have learned about many of the best practices that have worked for them.

  - *Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)*

    Metering large water users will begin to secure the District's water supply in times of drought, allowing for more water availability for agriculture users. Greater water security and more efficient allocation of water among all its secondary users will be realized as the District continues to implement meters into its system and as they encourage users to apply better water management practices. Conserved water will stay in the Weber River longer, allowing for tourist, environmental habitats and the

"Blue Ribbon Fishing" areas to have water longer. As this happens, recreation economies flourish and businesses are strong.

- *Extent to which the project will complement work done in coordination with NRCS in the area (e.g., with a direct connection to the district's water supply). Describe any on-farm efficiency work that is currently being completed or is anticipated to be completed in the future using NRCS assistance through EQIP or other programs.*
  The Project will support the District as they better manage their secondary irrigation system and work with users of their system on their water use. There are no anticipated EQIP projects on their system.

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?*
  Yes, the District has a Top Ten Projects Priority List in which this metering project is included as project priority number 3; listed as "Large water users, including golf course, schools, parks, Wrights, etc.; and begin metering residential subdivisions." Priorities 1 and 2 are piping replacement projects; therefore, this Project is considered the top metering project need. A copy of this list can be found in Attachment C – BID Top Ten Projects Priority List.

  District priorities are directly aligned with WBWCD priorities. This is appropriate because the District receives their water directly from them. WBWCD recently completed a Drought Contingency Plan in which they list their Top 10 Mitigation Measures, found on Page 63. Number three on their list is "Secondary Water Metering." The goal is to "meter all secondary WBWCD water users and provide usage reports to the users." Because Bountiful City lies within WBWCD's boundaries, this Project is directly supported by WBWCD's goals and needs. A letter of support from WBWCD can be found in Attachment D – Letter of Support. A copy of WBWCD's Drought Contingency Plan is available upon request.

  On pages 99 and 100 of Utah's Recommended State Water Strategy, the need for water measurement improvements and communication is identified. It states that "technological advances provide an opportunity for important metering of secondary water systems, with the potential of diminishing use per person or per acre. This provides for better price signaling to water consumers…a tool that can be used by water consumers to decide…how much water to use at their homes or businesses, especially on their outdoor landscapes." It also mentions "…improved communication with water users regarding water measurement…informing water users on how they can improve or optimize outdoor irrigation." The District's proposed Project is directly supported by this planning effort.

- *Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.*
  The need to meter large and residential water users has been a priority of the District's for some time and is considered a priority over other projects on the District's list because it presents the most immediate need. Residents are concerned about the unfair allocation of water, suspecting that large water users are taking far more than their allotted share. Residents are also concerned that many of their neighbors are using too much water on their lawns and gardens. This Project will work to resolve this issue and use secondary water metering data to conserve water and find a better balance in secondary water allocation among all types of water users in their service area.

  The Top 10 Mitigation Measures found in WBWCD's Drought Contingency plan were determined using a scoring system to help rank the mitigation measures to identify the measures that should be focused on first based on how well they meet drought mitigation objectives. Metering projects were determined to be among the most beneficial in mitigating drought conditions, and therefore were placed as number 3 on the list.

Evaluation Criterion C – Project Implementation

Describe the implementation plan for the proposed project. Include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.

Agreement Stage – September 2019 to April 2020
Award Announcement
Sign contract with Reclamation
Environmental Stage – April 2020 to July 2020
Prepare the environmental document
Construction Stage – October 2020 to April 2021
Install meters outside of irrigation season
Closeout Stage – May 2021 to September 2021
Finalize installation of meters, if necessary
Final reporting and project closeout

Describe any permits that will be required, along with the process for obtaining such permits.
Meter installations will take place in park strips, which does not require any permits to dig. If digging in the street is required, the District will need to obtain a digging permit from Bountiful City at a cost of $35.00 each.

Identify and describe any engineering or design work performed specifically in support of the proposed project.
The District has created a standard meter connection detail for meter installations. This design drawing will be used as the basis for the new meter installations.

Describe any new policies or administrative actions required to implement the project.
The District has an existing policy that requires all new connections to be metered; however, right now their focus is on metering existing secondary water connections for large and residential users in order to understand how metering will impact the reliability of their water supply system. This new policy is an education policy that will provide the metering date needed to inform the District and its water users on how much water they are using, so they can work together to implement water savings through better water management practices.

Describe how the environmental compliance estimate was developed. Have the compliance costs been discussed with the local Reclamation office?
The environmental compliance has been estimated based on previous meter installation projects from WBWCD, and Davis and Weber Counties Canal Company.

Evaluation Criterion D – Nexus to Reclamation

Is the proposed project connected to a Reclamation project or activity? If so, how? Please consider the following:

- *Does the applicant receive Reclamation project water?*
  Yes, the District receives its water from WBWCD. The majority of WBWCD's water is original Weber Basin Project water. 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 metering of the Project will not take place on Reclamation project lands, but because the District receives its water from WBWCD, the Project will have an effect on Reclamation facilities as better water management practices are put into practice in the District's service area.

- *Is the project in the same basin as a Reclamation project or activity?*
  The Project is within the WBWCD District boundaries, which is a Reclamation project.

- *Will the proposed work contribute water to a basin where a Reclamation project is located?*
  Yes, the District will conserve water in the Weber Basin Project area.

Will the project benefit any tribe(s)?
No, the project does not benefit any tribes.

Evaluation Criterion E – Department of the Interior Priorities

Creating a conservation stewardship legacy second only to Teddy Roosevelt
Teddy Roosevelt stated, "The conservation of natural resources is the fundamental problem. Unless we solve that problem, it will avail us little to solve all others." The District's proposed Project will contribute to solving this "fundamental problem" by metering large and residential water users that are taking water far beyond that of their allotted share, and holding them

accountable for their water use so that water can be conserved and better allocated among all types of users. Concern over water conservation is most prevalent in the western United States, and especially Utah – the second driest state in the nation. Because of drought, water conservation in Utah is something that is taken seriously by water distributors and users throughout the state. Although the District can do nothing to stop drought, the District actively seeks ways to reduce the disastrous effects of drought on the state, and by extension, their water users. By metering and holding its secondary water users accountable for their water use, the District is protecting Utah's water resources and ensuring that these resources are made available to sustain those living within their service area.

Restoring trust with local communities

Bountiful City secondary water users are concerned about water overuse by large water users, such as golf course, schools, parks, and large property owners. In addition, many are concerned that their neighbors are using too much water on their lawns and gardens. Without understanding the amount of water that is being used, it is difficult to resolve these concerns. This Project will hold large and residential secondary water users accountable for their water use and validate many grievances about watering; and may even help those who are concerned understand how they too can implement better practices that will conserve water.

Modernizing our infrastructure

Secondary metering became a viable option with the development of electromagnetic meters. These meters can now be installed to track, monitor, and educate water users on water usage, allowing suppliers the ability to understand the amount of water that is actually being used by individual users and to hold them accountable. In the past, this has only been a guess, and all suppliers could do is provide guidelines for smart water management practices with the hope that water users would hold themselves accountable.

Project Budget

Funding Plan and Letters of Commitment

Describe how the non-Federal share of project costs will be obtained.

A combination of District in-kind services and cash will be used for the District's non-federal share of project costs. In-kind services will be provided in the form of wages/benefits and District owned equipment. Cash will be contributed from the District's cash reserve account.

Identify the sources of the non-Federal cost share contribution for the project, including:

- *Any monetary contribution by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments)*
  The District will provide its cash contribution from their cash reserve account.
- *Any costs that will be contributed by the applicant*
  N/A
- *Any third party in-kind costs (i.e., goods and services provided by a third party)*
  The District will provide in-kind contributions as wages and benefits to existing full-time District staff along with current District owned equipment used for the installation of secondary water meters.
- *Any cash requested or received from other non-Federal entities*
  No funding has or will be requested or received from other Federal partners for the Project.
- *Any pending funding requests (i.e. grants or loans) that have not yet been approved, and explain how the project will be affected if such funding is denied*
  There are no pending funding requests.

In addition, identify whether the budget proposal includes any project costs that have been or may be incurred prior to award. For each cost, describe:

- *The project expenditure and amount*
  N/A
- *The date of cost incurrence*
  N/A
- *How the expenditure benefits the Project*
  N/A

Budget Proposal

Table 1 – Total Project Cost Table

Source	Amount
Costs to be reimbursed with the requested Federal funding	$75,000
District cash contribution	$28,204
District in-kind contribution	$46,796
Total Project Cost	**$150,000**

Table 2 – Budget Proposal

Budget Item Description	Computation		Quantity Type	Total Cost
	$/Unit	Quantity		
Salaries and Wages				**$18,652**
Manager	$65.50	40	Hours	$2,620
IT	$42.11	16	Hours	$674
Office Administrator	$26.72	65	Hours	$1,737
Field Supervisor	$36.28	80	Hours	$2,902
Foreman	$26.60	100	Hours	$2,660
Crew Member 1	$32.29	100	Hours	$3,229
Crew Member 2	$26.41	100	Hours	$2,641
Crew Member 3	$21.89	100	Hours	$2,189
Fringe Benefits (Includes 10% Overhead)				**$16,001**
Manager	$44.47	40	Hours	$1,779
IT	$31.13	16	Hours	$498
Office Administrator	$29.74	65	Hours	$1,933
Field Supervisor	$23.01	80	Hours	$1,841
Foreman	$24.67	100	Hours	$2,467
Crew Member 1	$28.70	100	Hours	$2,870
Crew Member 2	$24.78	100	Hours	$2,478
Crew Member 3	$21.35	100	Hours	$2,135
Equipment				**$12,143**
Backhoe – 4x4, 14’4” Digging Depth, Wheel Type	$32.68	65	Hours	$2,124
Dump Truck – 4x2, 35,000 LBS	$32.72	100	Hours	$3,272
Service Truck – Ford 550, 4x4, 1,000 LBS	$49.88	100	Hours	$4,988
Air Compressor – 185 CFM, 125 PSI	$17.59	100	Hours	$1,759
Supplies and Materials				**$98,204**
1” Meters	$750	40	EA	$30,000
2” Meters	$2,976	7	EA	$20,832
4” Meters	$5,545	7	EA	$38,815
6” Meters	$8,557	1	EA	$8,557
Contractual/Construction				**$5,000**
Environmental Review (NEPA)	$5,000	1	EA	$5,000
Third-Party In-Kind Contributions				**$0**
Other				**$0**
Total Direct Costs				**$150,000**
Indirect Costs				**$0**
Type of rate	Percentage	$base		$0
Total Estimated Project Costs				**$150,000**

Budget Narrative

Salaries and Wages

Wages of existing District employees who will complete work associated with the installation of secondary water meters are included in the budget at various hourly rates, for a total of $18,652. Manager will manage and review the Project over the 2-year project period, and IT will have limited involvement. The Office Administrator will perform work orders, input project dates/times, track employee hours, and prepare reports. Field Supervisor, Foreman, and Crew Members 1-3 will be directly involved with installing the proposed 1-inch to 6-inch secondary water meters. See Attachment E – BID 2019 Wages & Benefits. These costs will be part of the District's in-kind contribution.

Fringe Benefits

Benefits are included in the budget using each employee's hourly benefit rate, for a total of $16,001. Rates were determined by adding up each employee's benefits on an hourly basis, including social security, Medicare, workers comp, medical, dental, life insurance, sick leave, vacation, retirement, 401K, and 10% overhead. See Attachment E – BID 2019 Wages & Benefits. These costs will be part of the District's in-kind contribution.

Travel

No travel will be necessary.

Equipment

The equipment to be used on the project will consist of existing District owned equipment, for a total of $12,143. The hourly rate is the average total hourly rate ($/HR) outlined by the Region VII USACE Construction Equipment Ownership and Operating Expense Schedule (EP 1110-1-8) for a 4x4, 14'4" digging depth, wheel type backhoe; a 4x2, 35,000 lbs. dump truck; Ford 550, 4x4, 1,000 lbs. service truck; and a 185 cfm, 125 psi air compressor. See Attachment F – USACE 1110-1-8 (Vol.7)_Equipment Rates. These costs will be part of the District's in-kind contribution, and the equipment will be on the job with the crew for the duration of the Project.

Figure 5 – Bountiful Irrigation District Service Truck

Materials and Supplies

Materials and supplies will consist of 1-inch to 6-inch secondary water meter assemblies, for a total of $98,204. Forty 1-inch, seven 2-inch, seven 4-inch, and one 6-inch meter assemblies are required for the proposed Project. A combination of Reclamation funds and District cash will be used to purchase the meters.

Contractual

The only contractual cost associated with the Project is the $5,000 to prepare the Environmental document.

Third-Party In-Kind Contributions

No third-party in-kind contributions will be associated with the Project.

Environmental and Regulatory Compliance Costs

The District has included $5,000 in the budget to prepare the Environmental document. This is 3% of total project costs.

Other Expenses

No other expenses will be associated with the Project.

Indirect Costs

No indirect costs will be associated with the Project.

Total Costs

Total Project Costs: $150,000;	**Federal Cost Share:** $75,000 *(50%)*	**Non-Federal Cost Share:** $75,000 *(50%)*

Environmental and Cultural Resources Compliance

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

Impacts will be those associated with installing meters at the golf course, recreation center, schools, parks, large property owner land, and a residential subdivision. The proposed project improvements will take place entirely within the existing right-of-ways. In the past, similar projects have had minimal impacts. The surface vegetation will be restored upon completion of the project.

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?

The District is not aware of any impacts concerning threatened or endangered species in the Project area.

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 proposed project may have.

The District is not aware of any impacts to wetlands in the Project area.

When was the water delivery system constructed?

The District's secondary water system was constructed in 1953. The District had a loan for $3M through Reclamation to construct the system.

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? 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, the proposed project will install 55 new water meters on secondary water connections located on large water user property and in a residential subdivision located in the District's service area.

Are any buildings, structures, or features in the irrigation district 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.

The District is not aware of any building, structure or features that would qualify. A cultural resource inventory will be completed as part of the submitted environmental document.

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

The District is not aware of any impacts to or locations of archeological sites.

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

No. The Project will not require a right-of-way or relocations from adjacent properties and will have no impact on residential uses within the study area.

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

The District is not aware of any impacts to or locations of any of these types of sites. An inventory will be completed as part of the submitted environmental document.

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

No. The Project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

Required Permits or Approvals

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

Meter installations will take place in park strips, which does not require any permits to dig. If digging in the street is required, the District will need to obtain a digging permit from Bountiful City at a cost of $35.00 each.

Letters of Project Support

Include letters from interested stakeholders supporting the proposed project.

A letter of support from Weber Basin Water Conservancy District (WBWCD) can be found in Attachment D – Letter of Support.

Official Resolution

Include an official resolution adopted by the applicant's board of directors or governing body. The official resolution may be submitted up to 30 days after the application deadline.

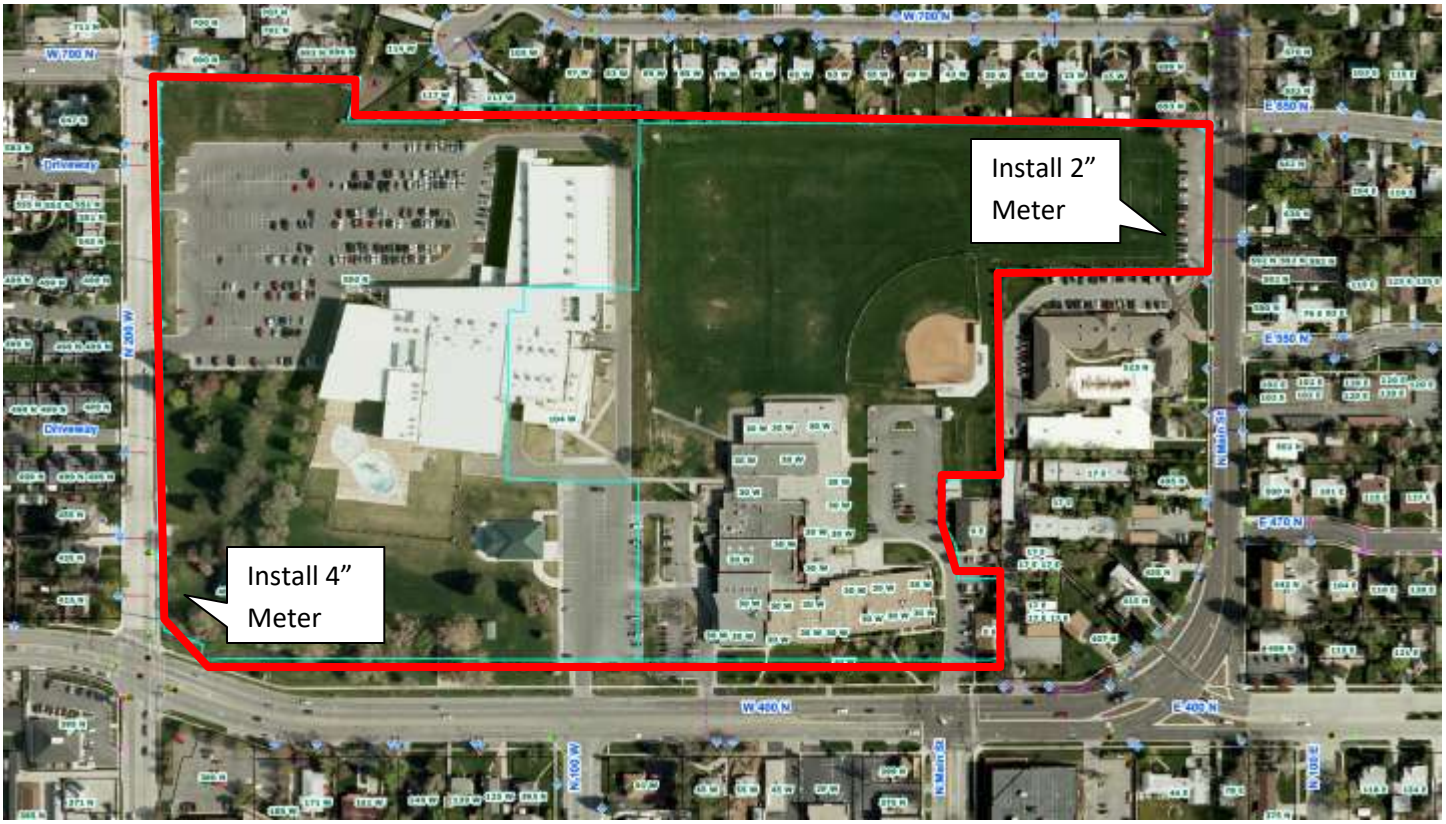
The Official Resolution for The District's Secondary Water System Metering Project will be submitted within 30 days of the application deadline.

Bountiful High School 40°52'55.27" N 111°52'11.74" W

Viewmont High School 40°54'02.13" N 111°52'57.96" W

Woods Cross High School 40°52'05.69" N 111°53'42.61" W

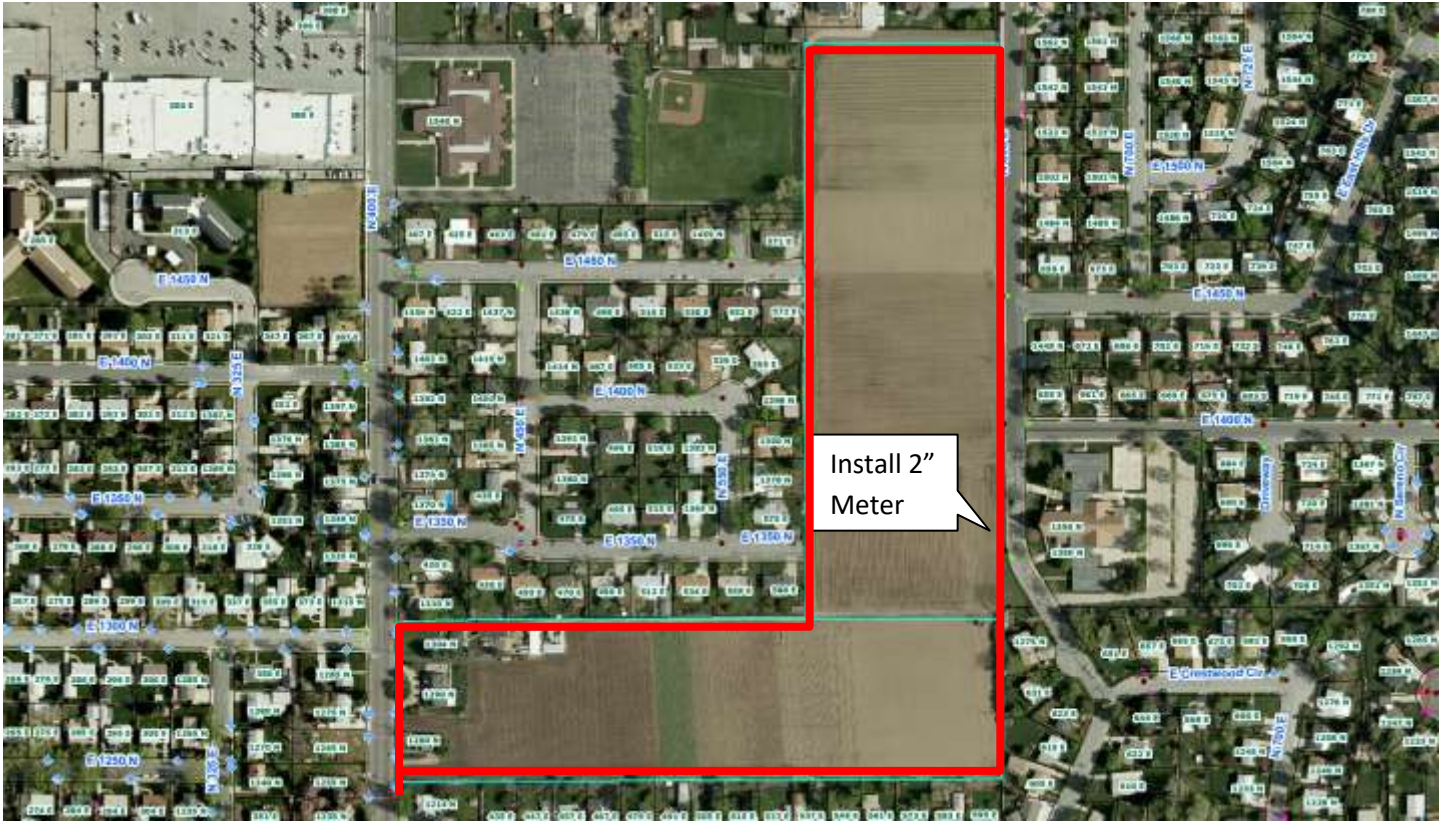
Bountiful Jr High School / South Davis Rec. Center 40°53'39.97" N 111°52'55.39" W



Bountiful Ridge Golf Course 40°51'47.72" N 111°51'15.38" W

Dave Wright Property 40°53'00.63" N 111°51'40.16" W

Bangerter Property 40°54'13.87" N 111°52'09.68" W



Meadowbrook Elementary 40°53'47.64" N 111°53'19.79" W

Holbrook Elementary 40°53'30.05" N 111°51'37.81" W

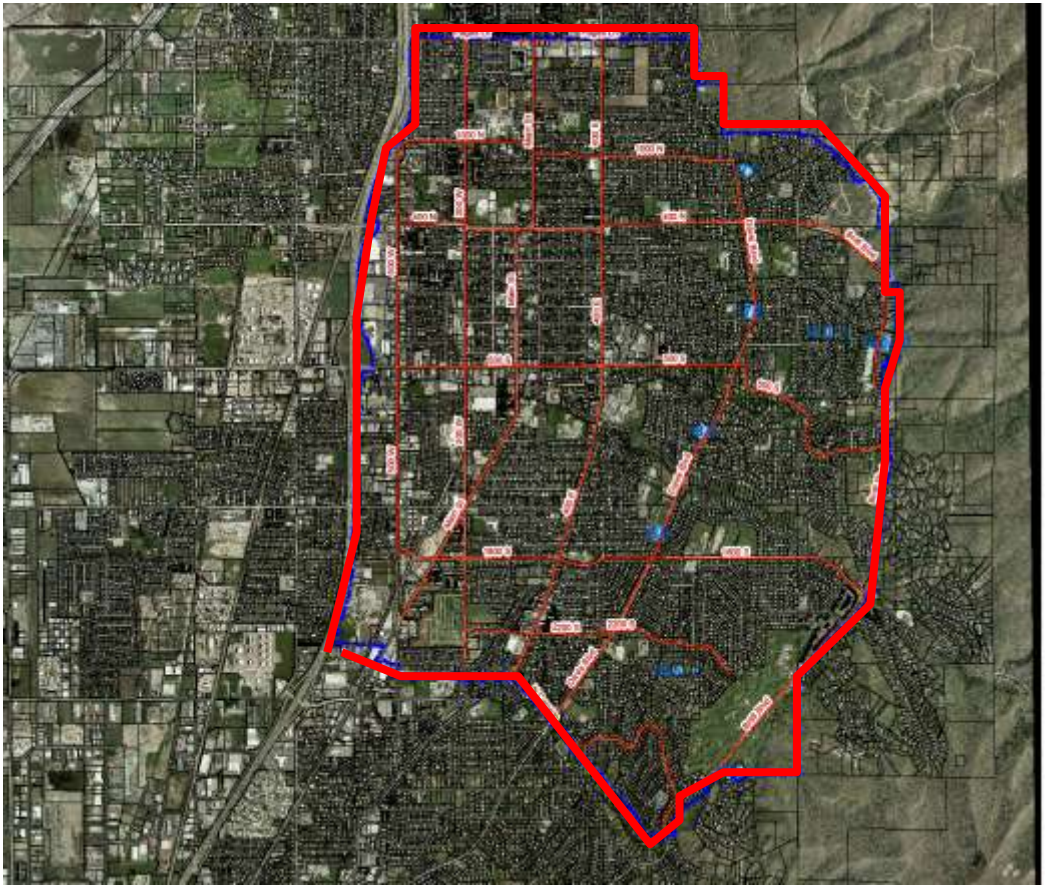
Rocket Park **40°53'33.87" N 111°51'14.60" W**

Mueller Park Jr. High **40°52'20.58" N 111°51'40.27" W**

Foss Lewis Residential Meters 40°51'28.12" N 111°52'26.18" W

District Boundary **40°53'03.46" N 111°52'20.48" W**

Attachment B - BID Boundary Map



Attachment C

Bountiful Irrigation District Top Ten Projects Priority List

1. **200 North Main Street to 400 East**
   Replace 10-inch Shot Coat pipe (2,500 ft.)

2. **Golf Course Trunk Line**
   Replace 16-inch Shot Coat pipe (move into Blvd or slip line)

3. **Large & Residential User Metering Project**
   Large water users, including golf course, recreation center, schools, parks, Wrights, etc.; and begin metering residential subdivisions

4. **1150 East 400 North to 500 North**
   Replace 4-inch AC pipe (500 ft.)

5. **Clairmont**
   Replace 4-inch AC pipe (1500 ft.)

6. **Green Oaks**
   Replace 6-inch AC pipe (650 ft.)

7. **Fair Oaks**
   Replace 8-inch AC pipe (1000 ft.)

8. **Crestwood Circle**
   Replace 4-inch AC pipe (650 ft.)

9. **650 East 600 North to 900 North**
   Replace 4-inch AC pipe (800 ft.)

10. **650 North 600 East to 700 East**
    Replace 4-inch AC pipe (600 ft.)

Attachment D - Letter of Support

WEBER BASIN WATER CONSERVANCY DISTRICT

2837 East Highway 193 • Layton, Utah 84040 • Phone (801) 771-1677 • (SLC) 359-4494 • Fax (801) 544-0103

April 17, 2019

Tage I. Flint
General Manager/CEO

Wes White, General Manager
Bountiful Irrigation District
955 South 500 West
Bountiful, UT 84010

RE: Letter of Support for Small-Scale Water Efficiency Project

Dear West:

Weber Basin Water Conservancy District ("District") is pleased to confirm its support of your grant application to the Bureau of Reclamation for a Small-Scale Water Efficiency Project. We applaud your efforts to increase the efficiency of your system to conserve valuable water through secondary water metering. We have implemented similar secondary metering projects and have documented significant water savings as consumers are made aware of their water use.

The District recognizes the importance of water conservation in our basin. The water saved through these improvement projects will provide benefits to water users and the regional environment. Bountiful Irrigation District continues to be a valuable partner promoting wise water uses in our area.

We strongly support your grant application and appreciate the advancements it will make in water savings and improving water efficiencies within the District's boundaries.

Sincerely,

Tage I. Flint, PE
General Manager/CEO

TIF/dh

Attachment E

Bountiful Irrigation District Employee Wages & Benefits

Job Description	Hourly Rate	Social Sec 6.20%	Medicare 1.45%	Workers Comp	Medical	Dental	Life Insurance	Sick Leave	Vacation	Retirement	401K	Subtotal	10% Overhead	TOTAL
MANAGER	$65.50	4.06	0.95	0.03	7.26	0.29	0.14	3.02	7.81	12.32	3.34	$104.72	$5.25	$109.97
IT	$42.11	2.61	0.61	0.03	7.26	0.29	0.14	1.94	4.86	7.78	2.11	$69.74	$3.50	$73.24
FIELD SUPERVISOR	$36.28	2.25	0.53	0.80	7.26	0.29	0.14	1.67	2.92	0	4.31	$56.45	$2.84	$59.29
CREW	$32.29	2.00	0.47	0.80	9.93	0.29	0.14	1.49	3.07	5.97	1.62	$58.07	$2.92	$60.99
CREW	$26.41	1.64	0.38	0.80	9.93	0.29	0.14	1.22	1.73	4.88	1.32	$48.74	$2.45	$51.19
FOREMAN	$26.60	1.65	0.39	0.80	9.93	0.29	0.14	1.23	1.53	4.92	1.33	$48.81	$2.46	$51.27
CREW	$21.89	1.36	0.32	0.80	9.93	0.29	0.14	1.01	0.93	3.41	1.1	$41.18	$2.06	$43.24
OFFICE ADMINSTRATOR	$26.72	1.66	0.39	0.03	14.51	0.58	0.28	1.23	2.06	4.94	1.34	$53.74	$2.72	$56.46

Table 2-1. HOURLY EQUIPMENT OWNERSHIP AND OPERATING EXPENSE

CAT	REGION 7 ID.NO.	MODEL	EQUIPMENT DESCRIPTION	ENGINE HORSEPOWER AND FUEL TYPE MAIN	CARRIER	VALUE (TEV) 2013 ($)	TOTAL HOURLY RATES ($/HR) AVERAGE	STANDBY	ADJUSTABLE ELEMENTS DEPR	FCCM	FUEL	CWT
L40			*CATERPILLAR INC. (MACHINE DIVISION) (continued)*									
	L40CA012	IT38H	LOADER, WHEEL, INTEGRATED TOOL CARRIER, 2.50 CY LOADER; 10,640 LB @ 12.58' HIGH FORK LIFT, OR 3,195 LB @ 23.25' HIGH, MATERIAL HANDLING ARM	145 HP D-off		$231,685	55.65	9.77	16.62	1.46	10.16	279
L50	**LOADERS / BACKHOE, WHEEL TYPE**											
	SUBCATEGORY 0.00		**LOADERS / BACKHOE, WHEEL TYPE**									
			CATERPILLAR INC. (MACHINE DIVISION)									
	L50CA001	416F	LOADER / BACKHOE, WHEEL, 1.00 CY FRONT END BUCKET, 24" DIP, 6.2 CF, 14.5' DIGGING DEPTH, 4X2	87 HP D-off		$96,753	24.35	4.07	6.91	0.61	4.72	162
	L50CA002	420F	LOADER/BACKHOE, WHEEL, 1.5 CY FRONT END BUCKET, 8.5 CF BACKHOE BUCKET, 14' 4" DIGGING DEPTH, 4X4	93 HP D-off		$141,526	32.68	5.97	10.15	0.89	5.04	154
	L50CA005	450F	LOADER / BACKHOE, WHEEL, 1.75 CY FRONT END BUCKET, 9.5 CF, 17.2' DIGGING DEPTH, 4X2	127 HP D-off		$205,656	46.44	8.88	15.16	1.30	6.89	241
			CASE CORPORATION									
	L50CS007	580 SUPER N	LOADER / BACKHOE, WHEEL, 1.29 CY FRONT END BUCKET, 12.7 CF BACKHOE BUCKET, 14.5' MAX DIGGING DEPTH, 4X4	97 HP D-off		$177,336	39.18	7.59	12.94	1.12	5.26	173
	L50CS008	590 SUPER N	LOADER / BACKHOE, WHEEL, 1.50 CY FRONT END BUCKET, 12.7 CF BACKHOE BUCKET, 15.5' MAX DIGGING DEPTH, 4X4	110 HP D-off		$200,722	44.51	8.54	14.53	1.27	5.97	205

Table 2-1. HOURLY EQUIPMENT OWNERSHIP AND OPERATING EXPENSE

CAT	REGION 7 ID.NO.	MODEL	EQUIPMENT DESCRIPTION	ENGINE HORSEPOWER AND FUEL TYPE MAIN	CARRIER	VALUE (TEV) 2013 ($)	TOTAL HOURLY RATES ($/HR) AVERAGE	STANDBY	ADJUSTABLE ELEMENTS DEPR	FCCM	FUEL	CWT
T50			***NO SPECIFIC MANUFACTURER (continued)***									
	T50XX035	4X2 32KGVW DSL	TRUCK, HIGHWAY, 32,000 LBS GVW, 2 AXLE, 4X2, WITH A QT-EQUIPMENT ARTICULATING CRANE, 3.5 TON, 32' BOOM, WITH 8' X 20' FLATBED	270 HP D-on		$111,688	33.07	4.99	8.62	0.68	12.85	135
	SUBCATEGORY 0.03		**OVER 30,000 GVW (Chassis only - Add options)**									
			NO SPECIFIC MANUFACTURER									
	T50XX027	4X2 35KGVW DSL	TRUCK, HIGHWAY, 35,000 LBS GVW, 2 AXLE, 4X2 (CHASSIS ONLY-ADD OPTIONS)	265 HP D-on		$97,196	33.91	3.69	6.21	0.58	17.81	126
	T50XX032	4X2 35KGVW DSL	DUMP TRUCK, HIGHWAY, 35,000 LBS GVW, 2 AXLE, 4X2 WITH REAR 10 - 13 CY DUMP BODY	265 HP D-on		$88,470	32.72	3.35	5.63	0.53	17.81	160
	T50XX028	6X4 45KGVW DSL	TRUCK, HIGHWAY, 45,000 LBS GVW, 3 AXLE, 6X4 (CHASSIS ONLY-ADD OPTIONS)	230 HP D-on		$108,930	33.12	4.07	6.82	0.66	15.46	135
	T50XX029	6X4 55KGVW DSL	TRUCK, HIGHWAY, 50,000 LBS GVW, 3 AXLE, 6X4 (CHASSIS ONLY-ADD OPTIONS)	310 HP D-on		$118,898	40.57	4.46	7.48	0.72	20.83	144
	T50XX030	6X6 70KGVW DSL	TRUCK, HIGHWAY, 70,000 LBS GVW, 3 AXLE, 6X6 (CHASSIS ONLY-ADD OPTIONS)	350 HP D-on		$164,068	49.84	6.24	10.49	0.99	23.52	180
	T50XX031	6X4 75KGVW DSL	TRUCK, HIGHWAY, 75,000 LBS GVW, 3 AXLE, 6X4 (CHASSIS ONLY-ADD OPTIONS)	400 HP D-on		$133,669	49.46	5.04	8.47	0.80	26.88	197
	T50XX033	6X4 75KGVW DSL	DUMP TRUCK, HIGHWAY, 75,000 LBS GVW, 3 AXLE, 6X4 WITH REAR 16 - 20 CY DUMP BODY	400 HP D-on		$165,803	53.89	6.31	10.61	1.00	26.88	240

Table 2-1. HOURLY EQUIPMENT OWNERSHIP AND OPERATING EXPENSE

CAT	REGION 7 ID.NO.	MODEL	EQUIPMENT DESCRIPTION	ENGINE HORSEPOWER AND FUEL TYPE MAIN	CARRIER	VALUE (TEV) 2013 ($)	TOTAL HOURLY RATES ($/HR) AVERAGE	STANDBY	ADJUSTABLE ELEMENTS DEPR	FCCM	FUEL	CWT
P40			***TEREX CORPORATION (continued)***									
	P40TE023	S40	MAN-LIFT, STRAIGHT BOOM, 46' HEIGHT, 500 LBS, 32' REACH, 4X4, SELF PROPELLED, 3' X 8' PLATFORM	48 HP D-off		$130,939	34.25	8.04	14.53	0.77	2.60	124
	P40TE024	S85	MAN-LIFT, STRAIGHT BOOM, 91' HEIGHT, 500 LBS, 76.5' REACH, 4X4, SELF PROPELLED, 3' X 8' PLATFORM	58 HP D-off		$269,119	70.68	15.98	28.77	1.59	3.15	380
	P40TE025	COMMANDER 4047	MAN-LIFT, LINE-TRUCK, W/ 12T LIFT CAPACITY BOOM, 47' MAX SHEAVE HEIGHT, 18" DIA AUGER, POLE GUIDES, MOUNTED ON FREIGHTLINER M2 4X2 56KGVW TRUCK CHASSIS	360 HP D-on		$190,739	72.98	11.69	21.12	1.13	24.19	220
	P40TE026	COMMANDER 6000	MAN-LIFT, LINE-TRUCK, W/ 13.5T LIFT CAPACITY BOOM, 60' MAX SHEAVE HEIGHT, 18" DIA AUGER, POLE GUIDES, MOUNTED ON FREIGHTLINER M2 6X6 56KGVW TRUCK CHASSIS	380 HP D-on		$248,369	88.73	15.14	27.34	1.47	25.54	310
	P40TE027	HR37M	MAN-LIFT, LINE-TRUCK, W/ 1,000 LB MATERIAL HANDLER, SINGLE MAN BUCKET W/ 42' MAX WORKING HEIGHT. MOUNTED ON FORD F550 4X4	300 HP D-on		$113,086	49.88	6.92	12.49	0.67	20.16	120
	P40TE028	LTM40	MAN-LIFT, LINE-TRUCK, W/ 800 LB MATERIAL HANDLER, SINGLE MAN BUCKET W/ 45' MAX WORKING HEIGHT. MOUNTED ON FORD F550 4X4	300 HP D-on		$132,794	54.51	8.14	14.71	0.78	20.16	130
	P40TE029	TM105	MAN-LIFT, LINE-TRUCK, W/ 1,500 LB MATERIAL HANDLER, SINGLE MAN BUCKET W/ 105' MAX WORKING HEIGHT. MOUNTED ON FREIGHTLINER M2 6X4 56KGVW TRUCK CHASSIS	360 HP D-on		$473,255	140.06	29.12	52.64	2.80	24.19	450

Table 2-1. HOURLY EQUIPMENT OWNERSHIP AND OPERATING EXPENSE

CAT	REGION 7 ID.NO.	MODEL	EQUIPMENT DESCRIPTION	ENGINE HORSEPOWER AND FUEL TYPE MAIN	CARRIER	VALUE (TEV) 2013 ($)	TOTAL HOURLY RATES ($/HR) AVERAGE	STANDBY	ADJUSTABLE ELEMENTS DEPR	FCCM	FUEL	CWT
A15			*NO SPECIFIC MANUFACTURER (continued)*									
	A15XX029	185G	AIR COMPRESSOR, 185 CFM, 125 PSI (ADD HOSE)	70 HP G		$22,373	17.59	1.02	1.76	0.14	11.85	23
	A15XX030	250D	AIR COMPRESSOR, 250 CFM, 100 PSI (ADD HOSE)	74 HP D-off		$38,579	13.57	1.77	3.06	0.24	6.02	27
	A15XX031	300	AIR COMPRESSOR, 300 CFM, 200 PSI (ADD HOSE)	122 HP D-off		$77,383	24.76	3.55	6.16	0.47	9.93	37
	A15XX032	375	AIR COMPRESSOR, 375 CFM, 150 PSI (ADD HOSE)	140 HP D-off		$69,964	25.13	3.22	5.57	0.43	11.39	42
	A15XX033	450	AIR COMPRESSOR, 450 CFM, 150 PSI (ADD HOSE)	173 HP D-off		$86,128	31.00	3.96	6.86	0.53	14.08	52
	A15XX034	600	AIR COMPRESSOR, 600 CFM, 150 PSI (ADD HOSE)	300 HP D-off		$196,524	62.04	8.99	15.57	1.20	24.41	150
	A15XX035	750	AIR COMPRESSOR, 750 CFM, 150 PSI (ADD HOSE)	270 HP D-off		$132,681	48.06	6.10	10.57	0.81	21.97	87
	A15XX036	825	AIR COMPRESSOR, 825 CFM, 125 PSI (ADD HOSE)	270 HP D-off		$132,681	48.06	6.10	10.57	0.81	21.97	87
	A15XX037	950	AIR COMPRESSOR, 950 CFM, 150 PSI (ADD HOSE)	310 HP D-off		$163,079	57.13	7.45	12.89	1.00	25.22	105
	A15XX038	1050	AIR COMPRESSOR, 1,050 CFM, 100 PSI (ADD HOSE)	300 HP D-off		$209,520	64.30	9.59	16.61	1.28	24.41	168
	A15XX039	1300	AIR COMPRESSOR, 1,400 CFM, 150 PSI (ADD HOSE)	475 HP D-off		$321,549	99.96	14.77	25.60	1.97	38.65	180
	A15XX040	1600	AIR COMPRESSOR, 1,600 CFM, 150 PSI (ADD HOSE)	500 HP D-off		$294,523	97.56	13.51	23.41	1.80	40.68	151