

WaterSMART: Small Scale Water Efficiency
Projects FY2017

Settlement Canyon Irrigation
Municipal Metering Tooele, Utah



PREPARED FOR:
SETTLEMENT CANYON IRRIGATION CO.

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

PROJECT MANAGER

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

January 10, 2017



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Executive Summary

DATE:

January 10, 2017

APPLICANT NAME:

Settlement Canyon Irrigation Co.:
██████████ President

APPLICANT CITY, COUNTY, AND STATE:

Tooele City, Tooele County, Utah

The Settlement Canyon Irrigation Company supplies secondary irrigation water for several farms and residential users in the Tooele Valley. However, the system does not currently monitor flow and, as a result, shareholders are able to use this water without regard to consumption. The company officials feel that up to 50% of shareholders are over watering. Because of this, the company has already installed 11 flow meters in its system to determine if adding flow meters system-wide would be beneficial. The test data for these 11 flow meters is found in Appendix C. The company then determined that adding flow meters would allow the company to regulate the allotted volume of irrigation water and implement fees for over-use to encourage water conservation. The company also determined that adding a Supervisory Control and Data Acquisition (SCADA) system would be necessary to monitor the system. This will aid the company in accounting for the water consumed. Overall water conserved is unknown at this time; however, with water meters installed, water will be monitored and overuse of the pre-determined water allowance per share will be billed at a premium rate.

Constructing irrigation flow meters would also be beneficial because the company could refrain from pumping groundwater into the reservoir in drought years, saving groundwater resources and electricity costs from pumping. ██████████ ee ██████████

██████████. Any water that is saved by adding flow meters would be freed-up to sell ██████████. This will help ██████████ save culinary water that is being used for secondary purposes. The saved water and energy will help conserve precious potable water in a basin that is continually dealing with shortage of water.

If the funding is awarded, the Settlement Canyon Irrigation Company plans to construct as many 1” residential flow meters as possible in the area shown in Figure 1. The area is located in Tooele City and spans from Vine Street to 7th South and from Main Street to 400 West. A 1” meter is preferred because the cost of larger diameter meters is significantly more. This way, the company will be able to construct flow meters in a larger portion of its serviced area. The cost of installing 1 flow meter is estimated to be \$3500 and if the funding were awarded, along with the contribution from the company, about 160 flow meters could be installed. This project is estimated to be completed in two years in the fall of 2019. The serviced area does not fall on a Federal facility.

Background Data

Provide a map of the area showing the geographic location (include the state, county, and direction from nearest town) of the proposed project. As applicable, describe the source of water supply, the total quantity of water supply managed and supplied, the water rights involved, current water uses (i.e., agricultural, municipal, domestic, or industrial), the number of water users served, and the current and projected water demand. If water is primarily used for irrigation, describe major crops and total acres served. Also, identify potential shortfalls in water supply. In addition, 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, please include the total approximate length of distribution lines, number and 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. Identify any past working relationships with Reclamation. This should include the date(s), description of the relationship(s) with Reclamation, and a description of the project(s).

The Settlement Canyon Irrigation Company has been incorporated since 1903. There are 4,253 shares of stock in the company. Each water connection requires a minimum of one share of stock plus one share per quarter-acre for all additional acreage over $\frac{1}{4}$ acre. The company manages and average of 1,800 acre-feet of water. The company currently has two water rights; [REDACTED] Settlement Canyon Dam is an earthen dam, constructed by Lawrence Engineering during 1962. The reservoir impounded by Settlement Canyon Dam is known as the Settlement Canyon Reservoir. Its primary purpose is to store flows of runoff for irrigation use in Tooele City and Tooele County, Utah. The construction of the Settlement Canyon Dam began in 1961. The embankment was completed in 1962 and initial filling began in 1962.

All irrigation from Settlement Canyon is now by means of a gravity pressure sprinkler system, which begins with a 24-inch diameter outlet pipe in the dam. The main line reduces to 20 inch and 16in. diameter, and extends 2,883 feet to the first service connection – at which point the system branches East and West and culminates in 11 laterals and several sub-laterals. Pipe sizes graduate from 24 inch down to 3-inch diameter laterals and $\frac{3}{4}$ inch service connections. Combined length of all pipes is in excess of 20 miles. Elevation of the spillway of the dam is 5,360 feet. The minimum water surface is 5,285 feet. The highest irrigated land is at an elevation 5,180 feet, and the lowest lands are at 4,700 feet. Pressure regulating valves are located throughout the system. Settlement Canyon provides pressurized irrigation water from three creeks and two wells in Settlement Canyon to around 800 lawn and garden shareholders and about 60 agriculture shareholders.

The major benefit to the project is estimated to be conserved water volume and energy by incentivizing reduced irrigation.

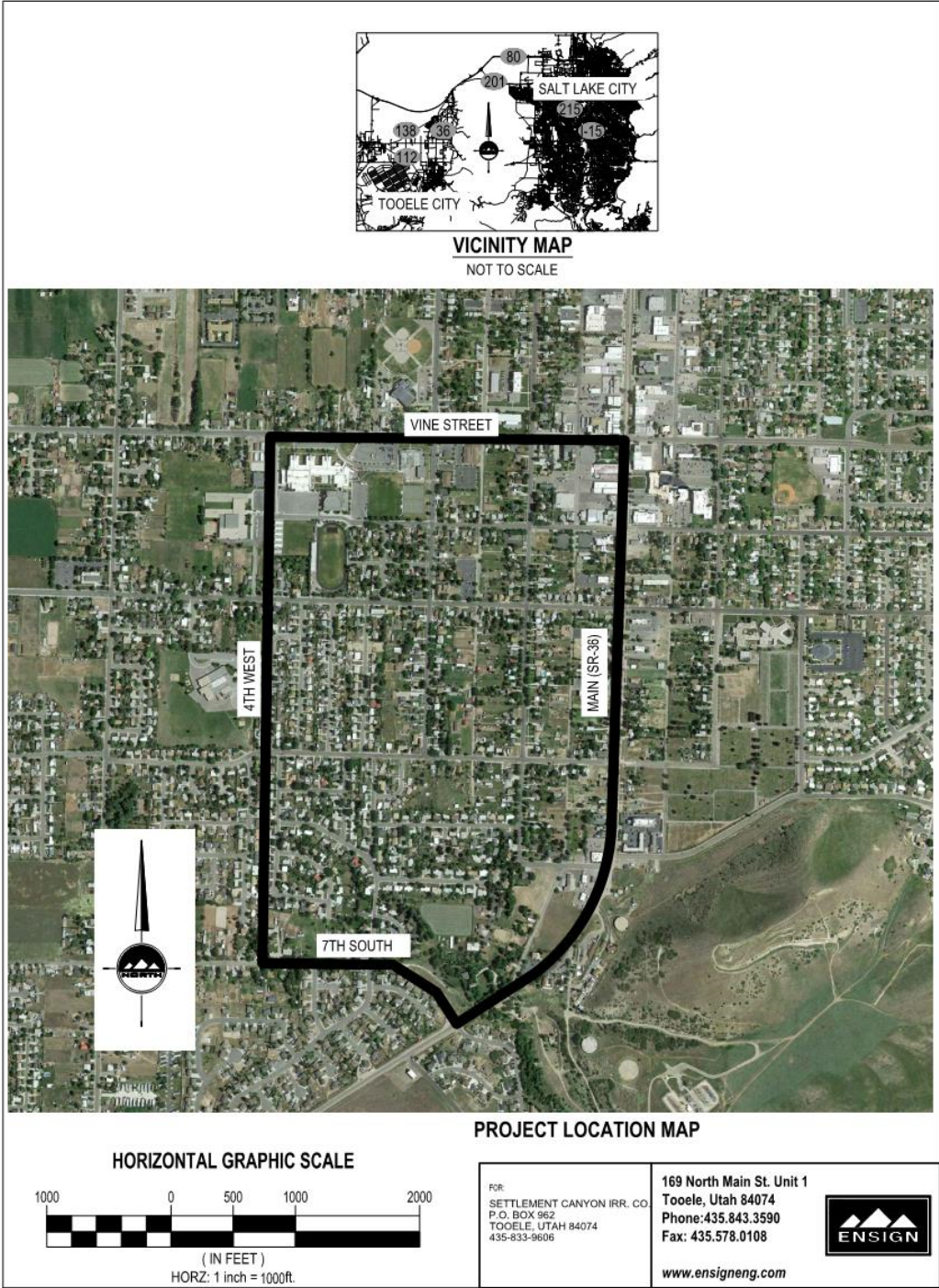


Figure 1: Estimated Project Area

Project Description

The project will address the need to monitor the usage of irrigation water in Tooele City. Installing as many flow meters as possible will help the company and its shareholders become better stewards of the available irrigation water. Along with the flow meters, a SCADA system will be implemented to aid in accounting of the water used. It is expected that implementing these changes will result in increased awareness of water usage and encourage water and energy conservation.

The project schedule is outlined in Table 1.

Evaluation Criteria

E.1.1. Evaluation Criterion A—Planning Efforts Supporting the Project (35 points)

Up to 35 points may be awarded based on the extent to which the proposed on-the-ground project is supported by an applicant's existing water management plan, water conservation plan, System Optimization Review (SOR), or identified as part of another planning effort led by the applicant. 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?*

The project addresses the need for water conservation among its shareholders. The company has observed for roughly 10 years that there is a need to incentivize water conservation. The irrigation company has multiple water conservation plans that are implemented throughout the year. In drought years, the shareholders are put on a watering restriction at the beginning of a watering season. The restriction for residential consumers differs from those using it for agricultural uses. Residential customers are restricted to only water certain afternoons of the week and for only a few hours at a time. Agricultural consumers are allowed to water in the evenings for 12 hours and only during week days. Some drought years require a tighter restriction, when this is the case the Irrigation Company requires the consumers to water less hours or fewer days or both depending on the board's decision. Also, all agricultural users have been required to remove all ½ inch watering jets and replace them with ¼ inch watering jets to reduce the amount of water used during watering times.

Another planning effort the company has performed is determining the cost of installing meters and gathering funding to contribute to the project along with Reclamation's funding help. The company has determined that flow meters and the associated SCADA system will help them manage their water more effectively.

- *Explain how the proposed project has been determined as a priority in the existing planning effort as opposed to other potential projects/measures.*

The company has applied for federal funding help previously to install piping in a porous canal upstream of the reservoir. The funding was dealt elsewhere. The company has determined that installing flow meters will be its main focus. The company has already installed 11 test meters to determine the effect of adding meters to its system and determined that adding flow meters would help the community conserve water. Overall water conserved is unknown at this time; however, with water meters installed, water will be monitored and overuse of the pre-determined water allowance per share will be billed at a premium rate. Any water conserved in drought years could save groundwater and energy resources.

E.1.2. Evaluation Criterion B—Project Benefits (35 points)

Up to 35 points may be awarded upon evaluation of the benefits that are expected to result from implementing the proposed project. This criterion considers a variety of project benefits, including improving the management of water supplies, the significance of the anticipated water management benefits, the public benefits of the project, and any expected environmental benefits.

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

The expected benefit to adding flow meters is raised awareness of water consumption and promoting water and energy conservation by the shareholders.

o What are the benefits to the applicant's water supply delivery system?

Adding flow meters and a SCADA system would benefit the company by allowing them to more easily review water usage and expedite the billing process.

o If other benefits are expected explain those as well. Consider the following:

- Extent to which the proposed project improves overall water supply reliability.*
- The expected scope of positive impact from the proposed project (e.g., local, sub-basin, basin)*
- Extent to which the proposed project will increase collaboration and information sharing among water managers in the region.*
- Any anticipated positive impacts/benefits to local sectors and economies (e.g., agriculture, environment, recreation, tourism)*

By adding flow meters into the system, it is expected that more of the company's irrigation water will be conserved and available for marketing to [REDACTED]. [REDACTED] has agreed to purchase any water surplus from the company and this collaboration would allow [REDACTED] to save more of its culinary water supply. It is also expected that the company will need to pump less groundwater to supplement the system in drought years.

Evaluation Criterion C—Project Implementation

(15 points) Up to 15 points may be awarded based upon the extent to which the applicant is capable of proceeding with the proposed project upon entering into a financial assistance agreement. Applicants that describe a detailed plan (e.g., estimated project schedule that shows

the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.

- 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 expected project milestones are as shown in Table 1.

Table 1: Project Schedule

Project Milestone	Duration	Dates
Obtain Technical Counsel	1 Month	September 30, 2017-October 30, 2017
Obtain Legal Counsel	1 Month	September 30, 2017-October 30, 2017
Obtain an environmental compliance report (if needed)	1 Month	September 30, 2017
Obtain quotes for flow meters and SCADA	2 Months	July 1, 2017-August 30, 2017
Obtain quotes for contractual labor	2 Months	July 1, 2017-August 30, 2017
Hire a contractor	1 Month	October 2017
Purchase the required materials & supplies	1 Month	October 2017
Install Meters	12 Months	November 1, 2017-November 1, 2018
Implement Billing Changes	Project Completion	January 1, 2019

- Describe any permits that will be required, along with the process for obtaining such permits.*

No permits are anticipated to be required, but any work performed in the public right-of-way will require a permit. In the event that work needs to be performed in the public right-of-way, a permit will be obtained from the entity that has jurisdiction of the right-of-way.

- Identify and describe any engineering or design work performed specifically in support of the proposed project.*

No engineering design is expected to be required.

- Describe any new policies or administrative actions required to implement the project.*

The project would require a billing change and would likely require legal counsel to draft up documents related to implementing the change.

Evaluation Criterion D - Nexus to Reclamation

How is the proposed project connected to a Reclamation project or activity?

The proposed project is not currently connected to a Reclamation project.

- Will the project help Reclamation meet trust responsibilities to any tribe(s)?*

The project is not anticipated to help Reclamation meet trust responsibilities with any tribe.

- *Does the applicant receive Reclamation project water?*

The applicant does not currently receive Reclamation project water.

- *Is the project on Reclamation project lands or involving Reclamation facilities?*

The proposed project is not currently on Reclamation project land or facilities.

- *Is the project in the same basin as a Reclamation project or activity?*

The project is not known to be in the same basin as a Reclamation project or activity.

- *Will the proposed work contribute water to a basin where a Reclamation project is located?*

The project is not expected to contribute water to a basin where a Reclamation project is located.

Environmental and Cultural Resources Compliance

Will the proposed 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 impact of the proposed scope of work would minimally affect the surrounding environment. The earth-disturbing work that would be done is excavating the water line in each shareholder's lot and installing a flow meter and vault. This earth-disturbing work will potentially create a minimal amount of dust and track mud from construction vehicles which could enter the storm drain system and pollute waters of the State. These effects can be minimized by utilizing a water tank to control dust and avoiding working on wet days. The expected water conserved would likely add volume to the Settlement Canyon Reservoir and could affect the species listed below.

- *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?*

Settlement Canyon Irrigation Company is not aware of any issues with endangered or threatened species in the area, but the following are Federally Listed and Endangered (E), Threatened (T), and Candidate (C) species that could be affected by water supply. The U.S. Fish and Wildlife Service identifies these species as known or believed to be in Tooele County.

(C) Greater sage-grouse (CENTROCERCUS UROPHASIANUS)

(T) Yellow-billed Cuckoo (COCCYZUS AMERICANUS)
(C) Least chub (LOTICHTHYS PHLEGETHONTIS)

The benefit of this project to a specific Endangered Species is unknown, but not anticipated to be unbeneficial.

• Are there wetlands or other surface waters inside the project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.

Settlement Canyon Irrigation Company is not aware of any issues with wetlands or other surface waters in the proposed project boundary.

• When was the water delivery system constructed?

The construction of the Settlement Canyon Dam began in 1961. The embankment was completed in 1962 and initial filling began in 1962.

• Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., head gates, 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.

The proposed project may affect individual features of the water delivery system, but the effects are not considered significant.

• 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.

According to the National Register of Historic Places GIS map, updated April 2014, there are no registered historic sites in the proposed project boundary.

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

Settlement Canyon Irrigation Company is not aware of any archeological sites in the area.

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

Settlement Canyon Irrigation Company does not expect the project to have an effect to low income or minority populations.

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

Settlement Canyon Irrigation Company does not expect the project to limit access to tribal lands in the area.

- *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?*

Settlement Canyon Irrigation Company does not anticipate disturbing the native weed species in the area.

Required Permits or Approvals

No permits are anticipated to be required, but any work performed in the public right-of-way will require a permit. In the event that work needs to be performed in the public right-of-way, a permit will be obtained from the entity that has jurisdiction of the right-of-way.

Official Resolution

The Official Resolution will be reviewed and signed at the next board meeting. After the board reviews and signs the Official Resolution it will be submitted before the 30-day deadline.

Project Budget

Funding Plan and Letters of Commitment

A formal letter of commitment is not available at the time of the submittal of this application [REDACTED]

[REDACTED] ee [REDACTED]

[REDACTED] e [REDACTED]

[REDACTED]

[REDACTED] The company requests 1/3 of the funding opportunity in fiscal year 2017 and 2/3 of the opportunity in fiscal year 2018. The company plans to construct as many meters as possible shown in Figure 1, with an estimated total of 40 meters.

Table 2 delineates the funding sources from both federal and non-federal funding sources. Table 3 shows the requested Reclamation funding for each year of the project duration. Table 4 shows the expected funding for the whole project while Table 5 shows the salaries and wages of the company's personnel.

Table 2: Summary of Non-Federal and Federal Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities	
Non-Federal Subtotal:	\$ 75,000.00
Requested Reclamation Funding:	\$ 75,000.00
Total Project Funding	\$ 150,000.00

Table 3: Funding Group Funding Request

Funding Group I Request		
	Year 1 (FY 2017)	Year 2 (FY 2018)
Funding Requested	\$ 25,000.00	\$ 50,000.00

Budget Proposal

Table 4: Budget Proposal

Item Description	Computation		Quantity Type	Total Cost
	\$/Unit	Quantity		
1" E-Series Meter	\$307	40	Per Meter	\$12,280.00
Endpoint/Encoder/NICOR	\$114.00	40	Per Meter	\$4,560.00
Beacon License	\$500.00	1	One-time Fee	\$500.00
Vault	\$100 (Estimate)	40	Per Meter	\$4,000.00
Contractual Labor	\$560 (Estimate)	40	Per Meter	\$22,400
SCADA Components	\$2,490 (Estimate)	40	Per Meter	\$99,600
Environmental Compliance	\$1,500	1%	Min.	\$1,500.00
Contingency		3.44%	Project Total	\$5,160.00
Total				\$150,000.00

Budget Narrative

The company requests 1/3 of Reclamation’s funding for the first fiscal year and 2/3 of Reclamation’s funding for the second year of the project. Table 3 outlines the proposed items that will be included in the budget of this project. It was estimated that each meter, along with the SCADA components, would cost roughly \$3,500. Therefore, the maximum number of meters that can be added based on this price is $\$150,000/\$3,500=42.86$ (take 40) meters. A quote received from Badger Meter was used to price the 1” Meter, Endpoint, and Beacon License costs. This quote can be found in Appendix A. The vault costs were drawn from DFW Heavy Duty Polymer Round & Oval Meter Boxes for 18” X 30” deep vaults. This price list can be found in Appendix B. The contractual labor was based on two workers, building the meter in 8 hours (16 man hours) at a rate of \$20.00/hour and

Fringe Benefits

Travel

No travel expenses are expected for the proposed project.

Equipment

There is no equipment anticipated to cost more than \$5,000.00. All system components are outlined in the budget proposal.

Material & Supplies

The required materials and supplies are outlined in the budget proposal.

Contractual

The contractual work to be performed is outlined in the budget proposal.

Environmental and Regulatory Compliance Costs

The costs for Environmental and Regulatory Compliance are included in the project inspection fees and are approximately 1% of construction costs. There are no foreseeable environmental impacts with this project at this time.

Other Expenses

No other expenses, besides those expenses outlined in the budget proposal, are expected.

Indirect Costs

No other indirect costs are expected.

Total Costs

The total estimated cost for the project is \$150,00.00, the maximum allotted amount.

Conclusion

The Settlement Canyon Irrigation Company system currently has no way to monitor water usage and, as a result, shareholders are able to use this water without regard to consumption. The company officials feel that up to 50% of shareholders are over-watering. The company then determined that adding flow meters would allow the company to regulate the allotted volume of irrigation water and implement fees for over-use to encourage water conservation. It is also expected that the company will need to pump less groundwater to supplement the system in drought years.

This will also help the city save curricular water that is being used for secondary purposes. This project would be a great improvement to the way of life in Tooele. Water is such an important commodity to any water that can be saved will be of great value to the community.

Appendix A



4545 West Brown Deer Road
 PO Box 245036
 Milwaukee, Wisconsin 53224-9536
 414-355-0400 | 800-876-3837
 www.badgermeter.com

To: **Weston Jensen**
 Company: Legrand Jensen, Inc.
 Address: 71 GLENWOOD AVE
 Tooele, UT 84074
 Email: westonjensen@live.com
 Phone: 435-830-5958

QUOTATION: 101016RH1
 Prepared by: Rick Heidvogel
rheidvogel@badgermeter.com

10/10/2016

Settlement Canyon Irrigation Company

QTY.	P/N	Meters	Price	Total
1	Configured	1" E-Series Meter (Stainless Steel w/ connections)	\$ 307.00	\$ 307.00
1	Configured	1.5" E-Series Meter (Stainless Steel w/ connections)	\$ 790.00	\$ 790.00
1	Configured	2" E-Series Meter (Stainless Steel w/ connections)	\$ 1,060.00	\$ 1,060.00
Cellular Endpoints				
1	68086-015	Endpoint/Encoder/NICOR	\$ 114.00	\$ 114.00
Beacon License				
1	Beacon-001	License fee (one time fee)	\$ 500.00	\$ 500.00
1	TRAINING	Includes 3 hour training webinar	N/C	N/C
				Total \$ 2,771.00
<i>number of endpoints X 12</i>				
Cellular Data Service				
12		Data Service Unit	\$ 5.00	\$ 60.00
<i>Data Service unit is \$5.00/endpoint per month - Billed Annually</i>				
1	68886-101	Data - North America	ref only	
0	68886-101	Data - Canada/Mexico	ref only	
0	68886-105	Data - Barnacle	ref only	

Quote valid for 30 days

Please reference the above quotation number on future correspondence.

- FOB shipping point
- US Funds
- All sales taxes; Customs duty and Brokerage Charges are responsibility of others.

Lead Time will be determined at the time an order is placed

THANK YOU FOR YOUR BUSINESS!

[Purchase Terms and Conditions](#)

[Endpoint Warranty](#)

Appendix B

Heavy Duty | Price List Key



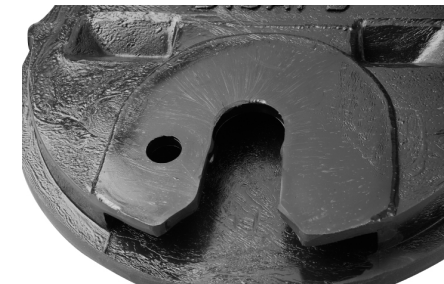
To create List Price for a specific product, use the Price on Black Body & a Solid Black Lid in each category and add color and/or options to the Base Price.

Option Key	Option Description	Cost	Color Key	Color	Cost Body Only	Cost Lid Only	Markings	Lid Color
A	AMR Pad Locator	Add \$6.65					Water Meter or Water	Black, Blue, Sand, Gray
B	Brass Lock (BLOCK)	Add \$16.55		Green	\$6.35	\$6.85	Medidor de Agua	Black
D	Bolt Down	Add \$2.10		Blue	\$6.35	\$6.85	ICV	Green
E	Rebar	Add \$2.45		Gray	\$8.40	\$8.95	Potable	Black, Blue
F	Knockout Hole	Add \$2.25		Purple	\$8.40	\$8.95	Reclaim Water, No Beber'	Purple
K	Plastic Lock (PLOCK)	Add \$5.00		Sand	\$8.40	\$8.95	Sewer	Black, Green
L	L Lock	Add \$3.50					Gas	Black, Green
M	Magnet	Add \$2.45					Electric	Gray
O	Overlay	Add List Price for Overlay to Body List						
P	Pickhole	Add \$0.55						
Q	Keyhole	Add \$0.00						
S	Brass Security Lock (SLOCK)	Add \$21.00						
T	Touch Read Hole (molded)	Add \$1.40						
U	Small AMR Pad (SAMR)	Add \$3.65						
W	Worm Lock (Brass)	Add \$17.70						
/W	Worm Lock (Polymer/Bronze)	Add \$13.25						
Y	Yoke Keyhole Only	Add \$0.00						
Z	Drilled Touch Read Hole	Add \$2.10 per hole						

Option Key	Plumb Body Options Only Meter Size & Size of Pipe Opening
1	5/8"
2	5/8" x 3/4"
3	3/4"
4	1"
6	1-1/2"
7	2"
S	Single Service In/Out
X	Single Service In/Double Service Out
/	Double Service In/Out
C	CTS Hole
Example	DFW37C-P12-4X3-BODY 1" Single Service In / Double 3/4" Service Out



Lid with Brass Key



Molded AMR Transponder Locator



Drilled Touch Read Hole

Anti-Float™ Polymer 'E' Lids

A special blended polymer 'E' lid that provides Anti-Float™ properties to help prevent the lid from floating off the meter box during heavy rains or flooding.

Option Code = AF

Position in Part Number = Before the Color Option
Option Cost = 10% added to the Base Price

Example - DFW1218-AF1-LID

DFW1218-1-LID - \$21.00 EA.

\$21.00 X 110% = \$23.10 EA.

Domestic cast iron lids are available from EJ USA.
Visit EJ USA at www.ejco.com or call 1.800.874.4100



www.dfwplasticsinc.com

Heavy Duty

Polymer Round & Oval Meter Boxes



Heavy Duty | Polymer Round & Oval Meter Boxes



DFW1014-1A-LID



DFW1218-11-BODY

Heavy Duty Oval Series

- Lid sits flush in box
- Product designed for installation in non-deliberate or incidental traffic areas. Not intended for installation in roadways.
- Special blend polyethylene polymer

HEAVY DUTY OVAL BODIES		List Price	Pallet Qty	Weight	Standard Lid
DFW1017-10-BODY	10X17X10 OVAL BLACK POLYMER BODY	\$27.30	32	8.00	DFW1017-1-LID
DFW1017-14-BODY	10X17X14 OVAL BLACK POLYMER BODY	\$34.65	32	11.00	DFW1017-1-LID
DFW1218-11-BODY	12X18X11 OVAL BLACK POLYMER BODY	\$32.30	24	11.00	DFW1218-1-LID
DFW1219-10-BODY	12X19X10 OVAL BLACK POLYMER BODY	\$32.30	32	10.00	DFW1219-1-LID
DFW1219-18-BODY	12X19X18 OVAL BLACK POLYMER BODY	\$42.00	16	14.00	DFW1219-1-LID
DFW1317-15-BODY	13X17X15 OVAL BLACK POLYMER BODY	\$39.65	18	13.00	DFW1317-1-LID
DFW1424-15-BODY	14X24X15 OVAL BLACK POLYMER BODY	\$69.30	6	24.00	DFW1424-1A-LID
HEAVY DUTY OVAL PLUMB BODIES		List Price	Pallet Qty	Weight	Standard Lid
DFW1017-P10-BODY	10X17X10 PLUMB OVAL BLACK POLYMER BODY	\$28.70	32	10.00	DFW1017-1-LID
DFW1017-P14-BODY	10X17X14 PLUMB OVAL BLACK POLYMER BODY	\$36.40	32	13.00	DFW1017-1-LID
DFW1219-P18-BODY	12X19X18 PLUMB OVAL BLACK POLYMER BODY	\$44.10	16	15.00	DFW1219-1-LID
HEAVY DUTY STANDARD OVAL LIDS		List Price	Pallet Qty	Weight	Load Rating *
DFW1017-1-LID	10X17 OVAL BLACK POLYMER LID	\$11.55	204	5.00	PEDESTRIAN
DFW1218-1-LID	12X18 OVAL BLACK POLYMER LID	\$21.00	150	7.00	PEDESTRIAN
DFW1219-1-LID	12X19 OVAL BLACK POLYMER LID	\$23.10	150	8.00	H-10
DFW1219SL-1-LID	12X19 OVAL SIDE LOCK BLACK POLYMER LID	\$23.10	150	9.00	H-10
DFW1219SS-1-LID	12X19 OVAL SS BLACK POLYMER LID	\$23.10	150	8.00	H-10
DFW1317-1-LID	13X17 OVAL BLACK POLYMER LID	\$25.75	120	9.00	H-10
DFW1424-1-LID	14X24 OVAL BLACK POLYMER LID	\$45.70	60	13.00	H-10

Weights may vary +/- 5%

* Load ratings are DFW lid in corresponding DFW body



Heavy Duty | Polymer Round & Oval Meter Boxes



DFW12AFOX-1A-LID



DFW6510-1Q-LID

DFW12ACO-1A-LID



Retrofit Lids

- Standard Flush Mount fit
- Molded AMR Transponder underneath lid to provide security and signal strength
- Lid has ability to custom fit to metal ring
- Skid resistant texture on lid
- Locking options: Key or Worm Lock
- Security option available

HEAVY DUTY RETROFIT LIDS		List Price	Pallet Qty	Weight	Load Rating *
DFW1012-1-LID	10X12 SQUARE BLACK POLYMER LID	\$11.55	204	6.00	H-10
DFW1014-1-LID	10X14 OVAL BLACK POLYMER LID	\$11.55	204	6.00	H-10
DFW1016-1-LID	10X16 OVAL BLACK POLYMER LID	\$13.85	204	7.00	H-10
DFW1018-1-LID	10X18 OVAL BLACK POLYMER LID	\$18.90	204	7.00	H-10
DFW1115-1-LID	11X15 SQUARE BLACK POLYMER LID	\$29.15	200	6.00	H-10
DFW1912-1-LID	12X19 OVAL BLACK POLYMER LID	\$23.10	150	8.00	H-10
DFW6510-1Q-LID	6.5X10 OVAL BLACK KEYHOLE POLYMER LID	\$13.15	300	2.50	H-10
DFW6510P-1Q-LID	6.5X10 OVAL BLACK AMR PIN HANGER KEYHOLE POLYMER LID	\$13.15	300	2.50	H-10
DFW6514-1Q-LID	6.5X14 OVAL BLACK KEYHOLE POLYMER LID	\$15.75	250	3.00	H-10
DFW6514P-1Q-LID	6.5X14 OVAL BLACK AMR PIN HANGER KEYHOLE POLYMER LID	\$15.75	250	3.00	H-10
DFWMB3811SL-1-LID	11X28 OVAL BLACK SIDE LOCK POLYMER LID	COMING SOON			H-10

Weights may vary +/- 5%

* Load ratings are for DFW retrofit lids only. Rating may change based on manufacturer of body.



Heavy Duty | Polymer Round & Oval Meter Boxes



HEAVY DUTY RETROFIT LIDS		List Price	Pallet Qty	Weight	Load Rating *
DFW10-1-LID	10" DIAMETER ROUND BLACK POLYMER LID	\$8.00	150	4.00	H-10
DFW10AMR-1-LID	10" DIAMETER ROUND BLACK AMR POLYMER LID	\$8.00	150	4.00	H-10
DFW11-1-LID	10-7/8" DIAMETER ROUND BLACK POLYMER LID	\$10.40	250	3.00	H-10
DFW12A-1-LID	12" DIAMETER ROUND BLACK HONEY COMB POLYMER LID	\$11.05	250	5.50	H-10
DFW12ACO-1Q-LID	12" DIAMETER ROUND BLACK CO OVERLAP KEYHOLE POLYMER LID	\$10.40	250	5.50	H-10
DFW12AFD-1Q-LID	12" DIAMETER ROUND BLACK DROP-IN KEYHOLE POLYMER LID	\$10.40	250	6.00	H-10
DFW12AFDX-1Q-LID	12" DIAMETER ROUND BLACK DUAL DROP-IN KEYHOLE POLYMER LID	\$14.10	250	7.50	H-10
DFW12AFOC-1Q-LID	12" DIAMETER ROUND BLACK OVERLAP "C" KEYHOLE POLYMER LID	\$10.40	250	5.50	H-10
DFW12AFOX-1Q-LID	12" DIAMETER ROUND BLACK OVERLAP "X" KEYHOLE POLYMER LID	\$10.40	250	5.50	H-10
DFW12AFOXX-1Q-LID	12" DIAMETER ROUND BLACK DUAL OVERLAP "M" KEYHOLE POLYMER LID	\$14.10	250	7.50	H-10
DFW12AMOX-1Q-LID	12" DIAMETER ROUND BLACK OVERLAP KEYHOLE POLYMER LID	\$10.40	250	5.50	H-10
DFW12AYD-1Q-LID	12" DIAMETER ROUND BLACK YOKE KEYHOLE POLYMER LID	\$10.40	250	4.00	H-10
DFW12FDOX-1-LID	12" DIAMETER ROUND BLACK DUAL OVERLAP POLYMER LID	\$14.10	250	7.50	H-10
DFW12FOCL-1Q-LID	12" DIAMETER ROUND BLACK DROP-IN "C" KEYHOLE POLYMER LID	\$10.40	250	6.00	H-10
DFW12FOCXL-1Q-LID	12" DIAMETER ROUND BLACK "C/X" KEYHOLE POLYMER LID	\$10.40	250	6.00	H-10
DFW12MW-1-LID	12" DIAMETER ROUND BLACK MONITORING WELL POLYMER LID	\$12.55	250	8.00	H-10
DFW15A-1A-LID	15" DIAMETER ROUND BLACK AMR POLYMER LID	\$28.10	50	20.00	H-10
DFW15AFD-1A-LID	15" DIAMETER ROUND BLACK DROP-IN AMR POLYMER LID	\$28.10	150	14.00	H-10
DFW15MUE-1A-LID	15" DIAMETER ROUND BLACK AMR POLYMER LID	\$28.10	150	14.00	H-10
DFW18MUE-1A-LID	19" DIAMETER ROUND BLACK AMR POLYMER LID	\$50.75	100	15.00	H-10
DFW18SD-1Q-LID	18" DIAMETER ROUND BLACK STORM DRAIN KEYHOLE POLYMER LID	\$44.10	100	17.00	H-10
DFW19AMR-1A-LID	19" DIAMETER ROUND BLACK AMR POLYMER LID	\$50.75	100	15.00	H-10
DFW19SD-1Q-LID	19" DIAMETER ROUND BLACK STORM DRAIN KEYHOLE POLYMER LID	\$44.10	100	17.00	H-10
DFW20AXF-1A-LID	20" DIAMETER ROUND BLACK DUAL AMR POLYMER LID	\$63.70	50	22.00	H-10
DFW20AXXF-1A-LID	20" DIAMETER ROUND BLACK QUAD AMR POLYMER LID	\$70.05	50	24.00	H-10

Weights may vary +/- 5%

* Load ratings are for DFW retrofit lids only. Rating may change based on manufacturer of body.



Appendix C

Address	Meter Type	Spring 2016 Reading (Ga)	Fall 2016 Reading (Ga)	Total Gallons Used 2016
[REDACTED]	V160	2,591,200	3,447,100	855,900
[REDACTED]	V160	217,300	437,300	220,000
[REDACTED]	V50	210,480	599,260	577,780
[REDACTED]	V160	1,976,600	2,906,900	930,300
[REDACTED]	V160	1,167,000	1,673,600	506,600
[REDACTED]	V100	706,600	1,882,200	1,175,600
[REDACTED]	V100	26,400	66,200	39,800
[REDACTED]	V100	233,300	653,900	420,600
[REDACTED]	V100	138,500	322,200	183,700
[REDACTED]	V100	33,500	79,600	46,100
[REDACTED]	V100	239,300	414,900	175,600