# City of Ammon

## Water Meter Installation Project

WaterSMART: Water and Energy Efficiency Grant

Fiscal Year 2020 and 2021

Funding Group I

Technical Proposal

(BOR-DO-20-F001)

Prepared for:

United States Bureau of Reclamation

City of Ammon, Idaho

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# Technical Proposal and Evaluation Criteria

## Executive Summary

Date: September 30, 2020

Applicant Name: City of Ammon

County of Bonneville

Idaho

The City of Ammon, Idaho, is applying to the WaterSMART: Water and Energy Efficiency Grant Program for **$300,00.00** for the Water Service Meter Installation Project (Project) under Funding Group I. The funds will be used to install residential water service meters in 916 locations that do not have water service meters. Many of these locations received municipal water service prior to 1979 and were constructed without any metering service. Installation of meters in these locations will result in a measurable 20% water savings in the first year after installation with an additional 0.5% annual reduction in water conservation in all years thereafter. Over a 20-year period, this project will result in a 37.5% reduction in water usage at these locations. This water conservation estimate is based on the Ammon Water Facilities Planning Study (AWFPS) that was approved by the City of Ammon in June 2018 (AWFPS, page 81). All meters installed will utilize advanced metering infrastructure (AMI) technology that will notify city crews of water leaks, fluctuations, and other inconsistencies in the system. The estimated water saved at these 916 locations is 352.25 acre feet over a 20-year period. The water service meters that will be installed are Sensus Iperl meters.

The Water Service Meter Installation Project (Project) is a two-year project beginning in July 2019 and concluding in July 2021. All work will be completed by City employees and private companies that have current contracts with the City of Ammon. The majority of the work will be performed by private contractors.

The Project is not located on a Federal facility.

## Background Data

The City of Ammon, Idaho, has a population of 15,252 and is located in a high-desert environment with limited water resources that draw upon both groundwater and surface water rights. The City of Ammon owns several groundwater rights within the Eastern Snake River Plain Aquifer with priority dates as senior as 1946 and as junior as 2001. All potable water is derived from eight (8) deep wells within the City of Ammon that draw upon these groundwater rights.

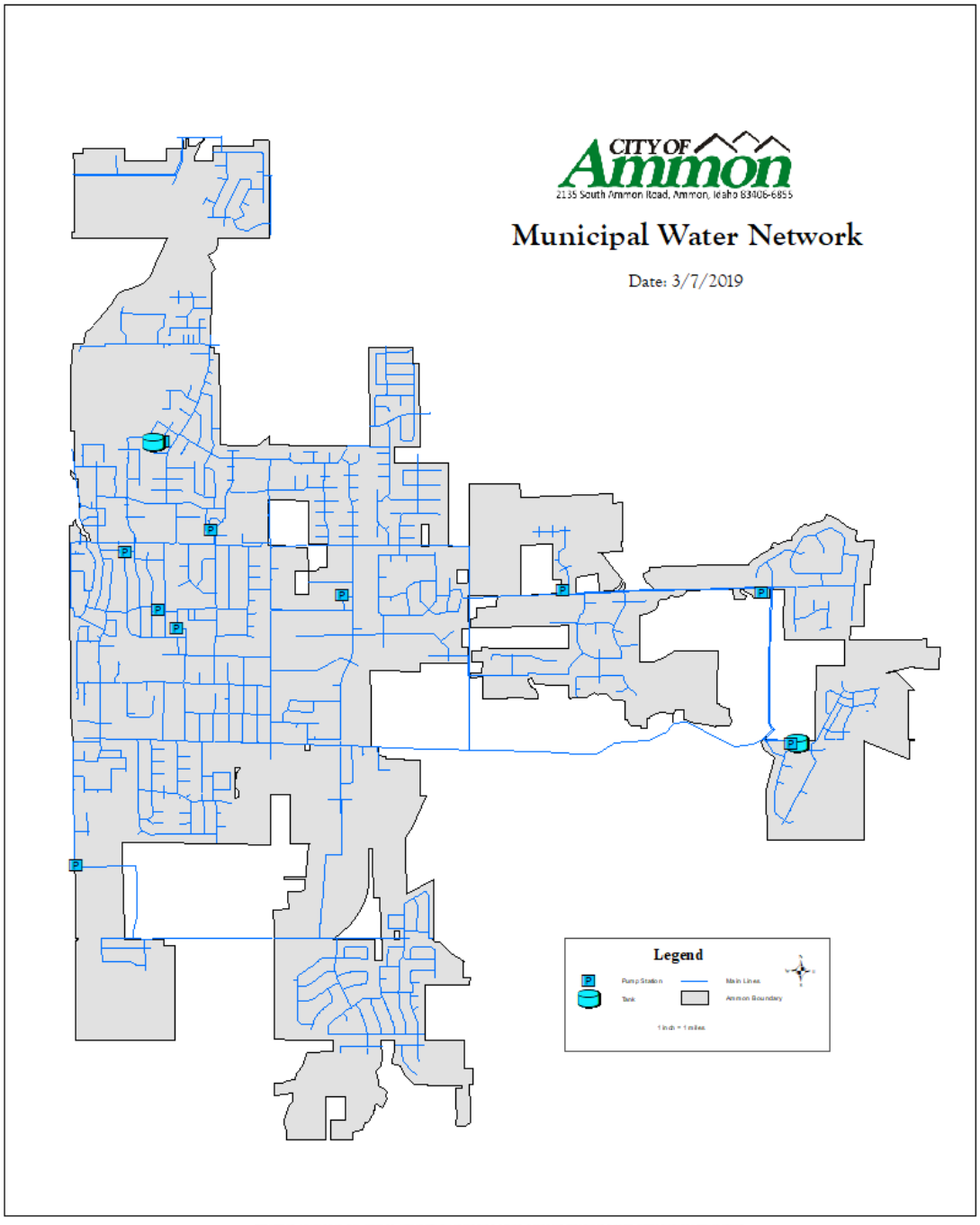
In 2018, the City completed the Ammon Water Facilities Planning Study (AWFPS) that comprehensively analyzed the City's water system and its groundwater rights portfolio. The Study was prepared by a team of licensed, professional engineers employed by Kellers Associates. In aggregate, the city's ground waters rights allow the City of Ammon to pump nearly 14,000 gallons per minute from the Eastern Snake River Plain Aquifer. To date, these groundwater rights have been adequate to service the population. However, the Ammon Water Facilities Planning Study (AWFPS) projected that these groundwater rights would not be adequate without immediate implementation of conservation and water metering (AWFPS, page 99-100). Among other things, the Study recommended the City of Ammon implement conservation measures to ensure the existing groundwater rights are adequate for the foreseeable future. Installation of meters in locations that do not currently have water service meters is a recommendation of the study. Key excerpts from the Ammon Water Facilities Planning Study that are referenced in this grant application is included as Attachment 5. The entire study can be accessed via the city's website at this link: http://b.ci.ammon.id.us/water/.

Potable water is currently used for commercial and domestic consumption with a significant proportion used for residential landscape irrigation during the summer months. The system currently serves 4546 customers. The entire city consumes 6,427 acre feet (AF) of potable groundwater per year. This amount is based on actual pump data at all well locations.

On March 7, 2019, the City Council for the City of Ammon adopted metered water rates for all water service customers. These newly adopted metered rates replace an antiquated flat-rate system that did not encourage conservation. These rates were effective April 1, 2019. While most of the water service customers are already on water service meters, approximately 1,242 customers do not have a meter. This grant will significantly assist the City of Ammon to install 916 meters in locations that are not currently metered.

Summer irrigation provides the most significant burden on the water system with all eight (8) wells working during the summer months. During winter months, only two (2) groundwater pumps are required to service all 4546 customers.

**Map 1: Map of Ammon City Water System**




## Project Location

The City of Ammon is located in eastern Idaho, adjacent to Idaho Falls. The history of the City of Ammon extends back to the late 1800s. The Village of Ammon was platted in 1905 and was incorporated as the City of Ammon in 1960 when the population was 1,882 residents. The city has grown to an estimated 15,252 residents. The greatest growth occurred between 2000 and 2010 when the population more than doubled, rising from 6,187 to 13,816. This growth is

projected to continue for the foreseeable future. The population for the City of Ammon is projected to exceed 25,000 in 2040.

The Water Service Meter Installation Project (Project) will take place entirely within municipal limits of the City of Ammon. The nearest city to Ammon is Idaho Falls, which shares a common border with Ammon. Ammon is 217 miles from Salt Lake City, UT and is 290 miles from Boise, Idaho. Ammon is also 168 miles from Yellowstone National Park and is 89 miles from Grand Teton National Park.

The project latitude is 43°28'40.51"N and longitude is 111°57'49.51"W.

**Map 2: Vicinity Map**

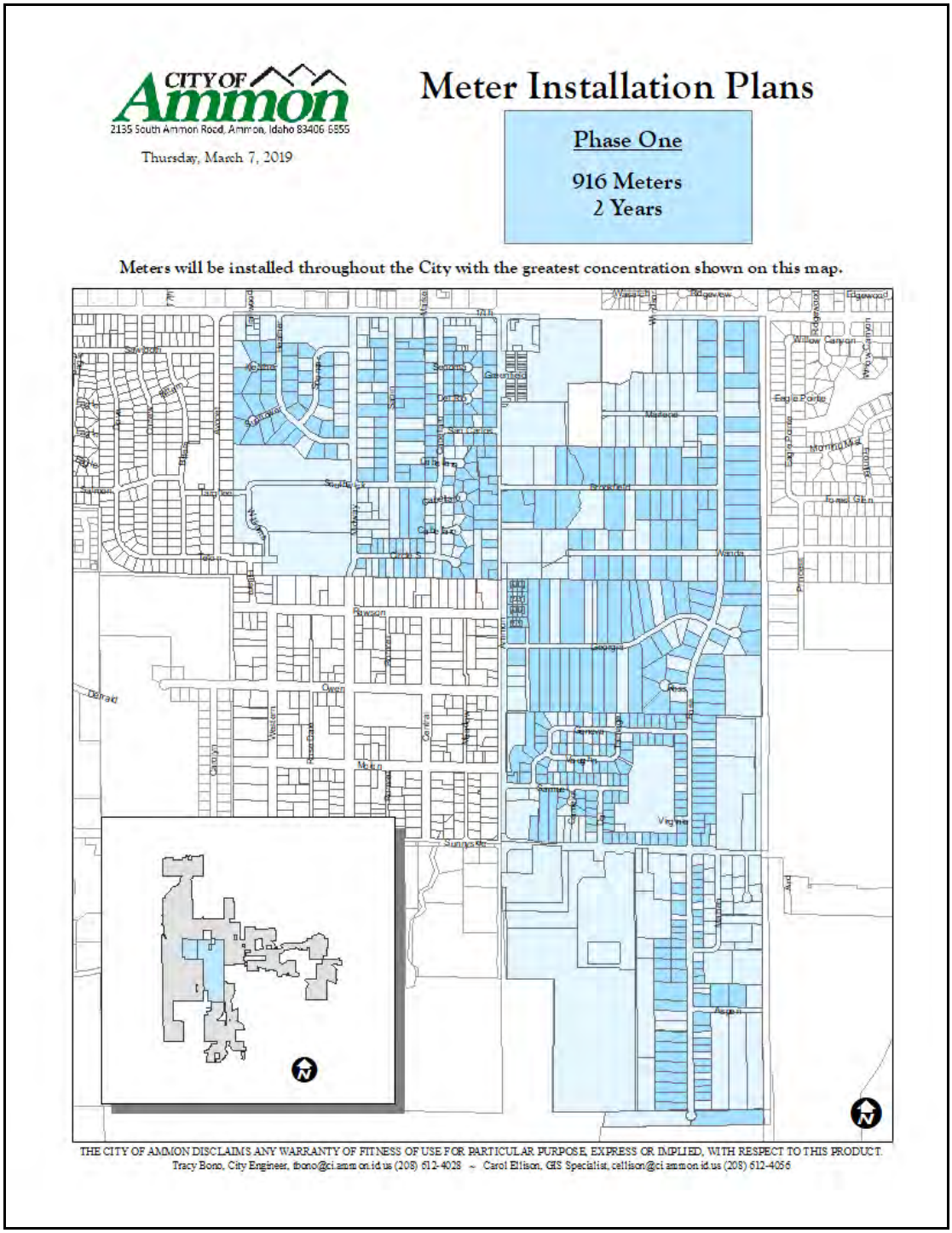

## Technical Project Description

For this project, the City will install 916 water service meters in residential locations that do not currently have water meters. Installation at each location will involve the following:

1. **Communication.** Communication with property owner concerning location for the water meter relative to their dwelling.
2. **Excavation.** Excavation of an area large enough for installation of a water vault
3. **Water Vault**. Installation of water vault.
4. **Water Service Meter**. Installation of water service meter between the service line and the city water main
5. **Backfill and Reconstruction**. Backfill and reconstruction of roads, sidewalks, and/or landscaping as appropriate for each location.
6. **Quality Control.** Pressure and quality testing after installation is complete.

The following map shows all 916 locations that will receive water service meters through this project:

**Map 3: Locations for 916 Meter Installations**



Estimated Project Schedule:

- Issue Request for Proposals: January 2020
- Contract Approval: April 2020
- Notice to Proceed: May 2020
- Construction Begins: July 2020
- Installation Complete July 2021

The City of Ammon has commenced work on this project according the timeline above and has devoted city funding to complete the project within the timeline above. Obtaining grants funds to offset the city funding dedicated for this project will allow the city to divert these local resources to other conservation projects.

## Evaluation Criteria

The evaluation criteria portion of your application should thoroughly address each criterion and subcriterion in the order presented to assist in the complete and accurate evaluation of your proposal.

### Evaluation Criterion A – Quantifiable Water Savings (30 Points)

1. *Describe the amount of estimated water savings. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project.*

The project will save 352.25 acre feet over a 20-year period (AWFPS, page 81). The following table shows estimated water savings over the 20-year life of the project:

**Table 1**
**Project Water Savings in Acre Feet**

| PROJECT WATER SAVINGS in Acre Feet (AF) | TOTAL |
|---|---|
| **Current Annual Water Demand A.F. at 916 Unmetered Locations** | 1,291.83AF |
| **20% Water Savings in First Year** | 258.37 AF |
| **Average 0.5% Water Savings in Years 2-20** | 4.94 AF |
| **Total Water Savings over 20 Year Project Life** | 352.25 AF |

Estimated water savings is derived from the average water usage of residential customers at metered locations throughout the City of Ammon on similar or identical sized lots and based on

the amount of water pumped from aquifer (AWFPS, page 81). The residential usage averages were applied to the 916 locations that do not have meters to determine water savings and conservation of water after meters are installed. All metered locations in Ammon are equipped with advanced metering infrastructure that relays instantaneous usage data to the City of Ammon. Please refer to Attachment 8 for additional water savings justification.

2. *Describe current losses: Please explain where the water that will be conserved is currently going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground)?*

Water that will be conserved will be retained in declining Eastern Snake River Plain Aquifer.

**Please address the following questions according to the type of infrastructure improvement you are proposing for funding. See Appendix A: Benefit Quantification and Performance Measure Guidance for additional guidance on quantifying water savings.**

**Municipal Metering: Municipal metering projects can provide water savings when individual user meters are installed where none exist to allow for unit or tiered pricing, when existing individual user meters are replaced with advanced metering infrastructure (AMI) meters, and when new meters are installed within a distribution system to assist with leakage reduction. To receive credit for water savings for a municipal metering project, an applicant must provide a detailed description of the method used to estimate savings, including references to documented savings from similar previously implemented projects. Applicants proposing municipal metering projects should address the following:**

- *How has the estimated average annual water savings that will result from the project been determined? Please provide all relevant calculations, assumptions, and supporting data.*

The project is estimated to result in a 37.5% water savings over the 20-year life of the project for the 916 locations. This results in a total water savings of 352.25 AF. These estimates are derived the actual usage data collected on the water system from groundwater pumping and from metered usage locations. The water conservation estimate is derived from the Ammon Water Facilities Planning Study dated June 2018 (AWFPS, page 81). See Attachment 8.

- *How have current distribution system losses and/or the potential for reductions in water use by individual users been determined?*

Water meters will benefit customers by providing them a tool to manage their water usage and assist in their efforts to conserve water, thereby reducing their utility bills. All new meters are equipped with AMI and capable of finding leaks and disruptions in the system before they become catastrophic. Water meters allow the City of Ammon to provide tools to empower its customers to make better decisions about their water use. Customers can track their usage

through the city's online utility billing portal. This allows customers to adjust their habits and reduce their water consumption.

*c. For installing individual water user meters, refer to studies in the region or in the applicant's service area that are relevant to water use patterns and the potential for reducing such use. In the absence of such studies, please explain in detail how expected water use reductions have been estimated and the basis for the estimations.*

Based on the Ammon Water Facilities Planning Study dated June 2018, a reduction of 20% in water usage is anticipated in the first year (AWFPS, page 81). See Attachment 8.

*d. If installing distribution main meters will result in conserved water, please provide support for this determination (including, but not limited to leakage studies, previous leakage reduction projects, etc.). Please provide details underlying any assumptions being made in support of water savings estimates (e.g., how leakage will be reduced once identified with improved meter data).*

Not applicable. No main meters will be installed, only residential water service meters.

*e. What types (manufacturer and model) of devices will be installed and what quantity of each?*

916 Sensus Iperl meters will be installed.

## Evaluation Criteria B – Water Supply Reliability (18 points)

1.*Will the project address a specific water reliability concern? Please address the following:*

*Explain and provide detail of the specific issue(s) in the area that is impacting water reliability, such as shortages due to drought, increased demand, or reduced deliveries. Will the project directly address a heightened competition for finite water supplies and over-allocation (e.g., population growth)?*

The Eastern Snake River Plain Aquifer has been in decline for decades which has resulted in extensive State planning and management efforts to stop and ultimately reverse the decline. The City of Ammon has entered into an agreement with several other municipalities aimed at conserving water in the aquifer. Summer irrigation of residential landscapes is the most significant strain and burden on Ammon's water system. Average household usage is 7,000 gallons per month during winter months when nearly all water consumption is within the home. This amount spikes to an average of 56,913 gallons (0.175 AF) per month per residence during the summer months when residents are irrigating lawns with potable water. This is an unsustainable impact on the water system. The City of Ammon is pursuing several measure to address this water reliability concerning, including the Water Service Metering Project.

*Describe how the project will address the water reliability concern? In your response, please address where the conserved water will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.*

The project will provide reliability to the water system by reducing summertime irrigation usage and improving conservation. By conserving water, the project will strengthen the sustainability of the City's existing groundwater rights to adequately serve the population for the foreseeable future. According to the Ammon Water Facilities Planning Study of 2018, the City's summertime usage will exceed groundwater right capacity in the next two years without conservation. If conservation is implemented and other measures that the City is pursuing, current groundwater rights can be extended to 2037 without acquiring any new rights. The project will assist with this by resulting in a 37.5% water savings at the 916 residential locations (Att. 8). NOTE: In addition to this project, the city is also requiring surface water for landscape irrigation for all new developments. This measure, while not related to this grant application, will also assist in providing reliability to the water system for the future and reduce our strain on the aquifer.

*Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.*

The water conserved will stay in the aquifer until needed. The intended use of all groundwater will eventually be for indoor consumption and not for summertime irrigation.

*Indicate the quantity of conserved water that will be used for the intended purpose.*

The entire amount of water saved will stay in the groundwater aquifer until needed. This amount is 352.25 AF over the 20-year project life span. See Attachment 8.

*2.Will the project make water available to achieve multiple benefits or to benefit multiple water users? Consider the following:*

*Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?*

Yes. The conserved water will provide for a healthier and less constrained aquifer that will benefit all groundwater users over time. In eastern Idaho, this includes agriculture users, municipalities, industrial users, recreation users, and provided environmental benefits. A number of cities who rely on the aquifer, including the City of Ammon, have entered into a long-term agreement aimed at preserving a sustainable water supply in the aquifer. This project will directly benefit that agreement by allowing the City of Ammon to better manage its withdrawals from the aquifer.

*Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project.*

Yes. The project will provide greater reliability for the pumping needs within the City of Ammon, thereby benefiting all species and wildlife that rely upon the aquifer for their habitat. By conserving water and pumping less water from the aquifer, natural springs and ponds that draw from the Eastern Snake River Plain Aquifer will be less threatened by volatile and seasonal pumping.

*Will the project benefit a larger initiative to address water reliability?*

Yes. According the Ammon Water Facilities Planning Study dated 2018, water metering will provide significant reliability to the water system by encouraging conservation and by providing increased monitoring of leaks and other system fluctuations.

*Will the project benefit Indian tribes?*

Yes. The Fort Hall Indian Reservation is located on the Eastern Snake River Aquifer and the Shoshone-Bannock tribe draws water directly from the aquifer. A healthier and more sustainable aquifer will directly benefit the tribe. Indirectly, the project may benefit native American users that utilize the system, but there are no Indian tribes currently on the Ammon water system.

*Will the project benefit rural or economically disadvantaged communities?*

Yes. City of Ammon is a rural community with less than 16,000 residents. Many of our residents are economically disadvantaged.

*3.Does the project promote and encourage collaboration among parties in a way that helps increase the reliability of the water supply?*

*Is there widespread support for the project?*

Yes. Water metering is supported in eastern Idaho and in neighboring states. The city is open to collaboration with neighboring communities to assist in installation of meters and sharing of resources that would result in greater water savings. The project will have a positive benefit to all users of the water system and all users of the Eastern Snake River Plain Aquifer for the foreseeable future. Water is a contentious issue but the City of Ammon is seen as a progressive leader in conservation and this project will provide the standard for city leadership in water conversation.

*4.Will the project address water supply reliability in other ways not described above?*

Yes. The City of Ammon is a progressive leader in eastern Idaho. The city believes that if Ammon implements water meters throughout the city then other cities in eastern Idaho will follow Ammon's lead and implement AMI meters on their own water systems. Currently, several cities in this region do not have any metering for their water users, including the City of Idaho Falls which has a population of 56,813. We believe that Ammon's meter project will have a domino effect on the regional water systems, resulting in significant conservation of our water resources.

### Evaluation Criteria C – Implementing Hydropower (18 points)

60% of power used in this region is generated from hydroelectric facilities. The project will result in fewer gallons pumped from the aquifer, therefore reducing the incremental strain on the hydroelectric facilities.

### Evaluation Criteria D – Complementing On-Farm Irrigation Improvements (10 points)

The project will encourage water conservation for urban gardens and urban agriculture. There are at least 2 commercial agricultural facilities within the project area that will benefit from a more reliable water system.

### Evaluation Criteria E – Department of Interior Priorities (10 points)

*Up to 10 points may be awarded based on the extent that the proposal demonstrates that the project supports the Department of the Interior priorities. Please address those priorities that are applicable to your project. It is not necessary to address priorities that are not applicable to your project. A project will not necessarily receive more points simply because multiple priorities are addressed. Points will be allocated based on the degree to which the project supports one or more of the priorities listed, and whether the connection to the priority(ies) is well supported in the proposal.*

1. *Creating a conservation stewardship legacy second only to Teddy Roosevelt*

- *Utilize science to identify best practices to manage land and water resources and adapt to changes in the environment;*

Yes. The Ammon Water Facilities Planning Study is based on current best practices for municipal water systems, conservation, and sustainable practices. The recommendation to install water service meters came from this study.

- *Examine land use planning processes and land use designations that govern public use and access;*

Yes. Separate from this grant request, the City of Ammon is requiring surface water (canal water) for all new land use developments. This will significantly reduce the strain on groundwater rights and alleviate system stresses.

- *Revise and streamline the environmental and regulatory review process while maintaining environmental standards.*

Yes. The City of Ammon is evaluating its regulatory review process to ensure that all environmental considerations are addressed.

- *Review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflicts and expand capacity;*

Yes. The Eastern Snake River Plain Aquifer is hydraulically connected to the Snake River which has multiple Bureau of Reclamation reservoir storage projects on it. The Ammon Water Facilities Planning study addresses these water storage, transportation, and distribution systems throughout the study, particularly in Chapter 6 and Chapter 7.

- *Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands;*

Yes. The City of Ammon is working with the Idaho Conservation League (ICL) on promoting our water conservation efforts with the goal of inspiring other cities in Idaho to make strategic decisions for promoting water conservation.

- *Identify and implement initiatives to expand access to DOI lands for hunting and fishing;*

Not addressed.

- *Shift the balance towards providing greater public access to public lands over restrictions to access.*

Not addressed.

*2. Utilizing our natural resources*

- *Ensure American Energy is available to meet our security and economic needs;*

60% of power used in this region is generated from hydroelectric facilities located in the State of Idaho. The project will result in fewer gallons pumped from the aquifer, therefore reducing the incremental strain on the hydroelectric facilities and ensuring greater long-term sustainability for electricity generated locally.

- *Ensure access to mineral resources, especially the critical and rare earth minerals needed for scientific, technological, or military applications;*

Not addressed.

*c. Refocus timber programs to embrace the entire 'healthy forests' lifecycle;*

Not addressed.

*d. Manage competition for grazing resources.*

Not addressed.

*3. Restoring trust with local communities*

*a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands;*

Yes. Many regional cities are watching Ammon's water project closely. The City of Ammon is a progressive leader in eastern Idaho. The city believes that if Ammon implements water meters throughout the city then other cities in eastern Idaho will follow Ammon's lead and implement AMI meters on their own water systems. We believe that Ammon's meter project will have a domino effect on the regional water systems, resulting in significant conservation of our water resources.

*b. Expand the lines of communication with Governors, state natural resource offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes, and local communities.*

Yes. The Ammon Water Facilities Planning Study required close collaboration with state authorities regulating water resources. The recommendation for installing meters came from the Study.

*4.Striking a regulatory balance*

*a. Reduce the administrative and regulatory burden imposed on U.S. industry and the public;*

Yes. Utilizing AMI, installing water service meters will streamline efforts to manage the water system, making it more efficient and reducing the financial and regulatory burden on US industry and the public.

*b. Ensure that Endangered Species Act decisions are based on strong science and thorough analysis.*

Not addressed.

*5.Modernizing our infrastructure*

*a. Support the White House Public/Private Partnership Initiative to modernize U.S. infrastructure;*

Yes. The city will be contracting out the vast majority of work on the Project, thus producing private-sector employment through a public-sector project.

*b. Remove impediments to infrastructure development and facilitate private sector efforts to construct infrastructure projects serving American needs;*

Yes. The city will utilize private sector equipment, materials, tools, and contractors for completing the Project.

*c. Prioritize DOI infrastructure needs to highlight:*

*1. Construction of infrastructure;*

*2. Cyclical maintenance;*

*3. Deferred maintenance.*

Not addressed

## Evaluation Criteria F – Implementation and Results (6 points)

*Up to 6 points may be awarded for these subcriteria.*

*Points may be awarded for proposals with planning efforts that provide support for the proposed project.*

*Does the applicant have a Water Conservation Plan and/or System Optimization Review (SOR) in place? Please self-certify or provide copies of these plans where appropriate to verify that such a plan is in place.*

Yes. The City of Ammon completed the Ammon Water Facilities Planning Study in 2018, which provides a process for performance evaluation of the system after making key improvements. This plan can be accessed via the city website at this link: http://b.ci.ammon.id.us/water/

*Provide the following information regarding project planning:*

*(1) Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, Drought Contingency Plan or other planning efforts done to determine the priority of this project in relation to other potential projects.*

*(2) Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).*

*Points may be awarded based on the description and development of performance measures to quantify actual project benefits upon completion of the project.*

*Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved). For more information, calculating performance measure, see Appendix A: Benefit Quantification and Performance Measure Guidance.*

*All Water and Energy Efficiency Grant applicants are required to propose a "performance measure" (a method of quantifying the actual benefits of their project once it is completed). A provision will be included in all assistance agreements with Water and Energy Efficiency Grant recipients describing the performance measure and requiring the recipient to quantify the actual project benefits in their final report to Reclamation upon completion of the project. If information regarding project benefits is not available immediately upon completion of the project, the financial assistance agreement may be modified to remain open until such information is available and until a Final Report is submitted. Quantifying project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of Water and Energy Efficiency Grants.*

*Note: program funding may be used to install necessary equipment to monitor progress. However, program funding may not be used to measure performance after project construction is complete (these costs are considered normal operation and maintenance costs and are the responsibility of the applicant).*

*Points may be awarded based upon the extent to which the proposed project is capable of proceeding 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 of 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.*

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

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

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

*Describe how the environmental compliance estimate was developed. Has the compliance cost been discussed with the local Reclamation office?*

### Evaluation Criteria G – Nexus to Reclamation Project Activities (4 points)

*Up to 4 points may be awarded if the proposed project is in a basin with connections to Reclamation project activities. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.*

The City of Ammon is located on the Snake River Plain which is included in the USBR Minidoka Project. The City's potable water supply comes entirely from the Eastern Snake River Plain Aquifer which is hydraulically connected to the Snake River and supplies significant spring flows directly into the river at various locations including the American Falls Reservoir, the largest

reservoir in the Minidoka Project. All conservation efforts implemented by the City of Ammon will directly contribute to more sustainable water supplies for the Minidoka Project.

### Evaluation Criteria H – Additional Non-Federal Funding (4 points)

*Up to 4 points may be awarded to proposals that provide non-Federal funding in excess of 50 percent of the project costs. State the percentage of non-Federal funding provided using the following calculation: Non-Federal Funding/Total Project Cost.*

$$\frac{\$2,293,371 \text{ Non-Federal Funding}}{\$2,593,371 \text{ Total Project Cost}} = 88.4\%$$

88.4% of total project cost is paid by the City of Ammon in direct funding and materials (see Project Budget below). The City of Ammon currently has the full amount required to construct the project, including all water vaults and water service meters.

## Project Budget

### Funding Plan and Letters of Commitment

- *Please identify the sources of the non-Federal cost share contribution for the project, including: Any monetary contributions by the applicant towards the cost-share requirement and source of funds (e.g., reserve account, tax revenue, and/or assessments)*

The City's monetary cost share of $2,293,371.00 and will be derived from ratepayer fees while $300,000.00 will be funded by a BOR grant. The City immediately has the full amount in cash and materials for project. To ease the financial burden, the City will also pursue other funding opportunities as they become available.

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

No costs have been incurred to date. However, depending on when the award is issued, the city will incur costs related to installation of water service meters. The installation cost per meter is estimated at $1,562 per meter location. The materials cost per meter is $1,011.80. When the award is announced, the City can audit the project and issue an exact amount of costs to BOR. Work on water meter installations will begin in spring 2020.

## Budget Proposal

The total project cost (Total Project Cost), is the sum of all allowable items of costs, including all required cost sharing and voluntary committed cost sharing, including third-party contributions, that are necessary to complete the project.

**Table 2. - Total Project Cost Table**

| SOURCE | AMOUNT |
|---|---|
| Costs to be reimbursed with the requested Federal Funding | $300,000.00 |
| Costs to be paid by the applicant | $2,293,371.00 |
| Value of third party contributions | $0 |
| **TOTAL PROJECT COSTS** | **$2,593,371.00** |

**Table 3. - Budget Proposal Format**

| BUDGET ITEM DESCRIPTION | COMPUTATION $/Unit | COMPUTATION Quantity | Quantity Type | TOTAL COST |
|---|---|---|---|---|
| **Salaries and Wages** | | | | |
| Employee 1 | | | | $0.00 |
| Employee 2 | | | | $0.00 |
| Employee 3 | | | | $0.00 |
| **Fringe Benefits** | | | | |
| Full-Time Employees | | | | $0.00 |
| Part-Time Employees | | | | $0.00 |
| **Travel** | | | | |
| Trip 1 | | | | $0.00 |
| Trip 2 | | | | $0.00 |
| Trip 3 | | | | $0.00 |
| **Equipment** | | | | |
| Item A | | | | $0.00 |
| Item B | | | | $0.00 |
| Item C | | | | $0.00 |
| **Supplies and Materials** | | | | |
| Water Vaults | $610.75 | 916 | Per Each | $559,447.00 |
| Water Service Meter-Sensus Iperl | $401.06 | 916 | Per each | $367,370.00 |
| **Contractual/Construction** | | | | |
| Contractor A | | | | $1,430,792.00 |
| Contractor B | | | | 0.00 |
| **Third-Party Contributions** | | | | |
| Contributor A | | | | $0.00 |
| Contributor B | | | | $0.00 |
| **Other** | | | | |
| Contingency 10% | | | | $235,761.00 |

| BUDGET ITEM DESCRIPTION | COMPUTATION $/Unit | Quantity | Quantity Type | TOTAL COST |
|---|---|---|---|---|
| **TOTAL DIRECT COSTS** | | | | $2,593,371.00 |
| **Indirect Costs** | | | | |
| Type of rate | Percentage | $base | | $0.00 |
| **TOTAL ESTIMATED PROJECT COSTS** | | | | $2,593,371.00 |

## Budget Narrative

**Materials and Supplies**

*Itemize supplies by major category, unit price, quantity, and purpose, such as whether the items are needed for office use, research, or construction. Identify how these costs were estimated (i.e., quotes, engineering estimates, or other methodology). Note: If the materials/supplies will be furnished and installed under a contract, the equipment should be included in the construction contract cost estimate.*

The City of Ammon is providing $926,818.00 in materials, including all water vaults and water service meters for the 916 locations. The following table illustrates costs and quantities for all materials provided by the City of Ammon:

**Table 4. Materials and Supplies**

| Material(s) | Cost per Unit | Quantity | Total Cost |
|---|---|---|---|
| **Water Meter Vault** | $610.75 | 916 | **$559,447.00** |
| **Water Service Meters (Sensus Iperl)** | $401.06 | 916 | **$367.371.00** |
| | | **Total** | **$926,818.00** |

***Contract Labor***

*Contractual*

*Identify all work that will be accomplished by consultants or contractors, including a breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task. For each proposed contract, identify the procurement method that will be used to select the consultant or contractor and the basis for selection. Please note that all procurements with an anticipated aggregate value that exceeds the Micro-purchase Threshold (currently $10,000) must use a competitive procurement method (see 2 CFR §200.320 – Methods of procurement to be followed). Only contracts for architectural/engineering services can be awarded using a qualifications-based procurement method. If a qualifications-based procurement method is used, profit must be negotiated as a separate element of the contract price. See 2 CFR §200.317 through §200.326 for additional information regarding procurements, including required contract content.*

Private contractors will be used for installation of meters and AMI equipment in all situations, unless city staff must be involved. The costs submitted contemplate 100% of installation to be complete by private contractors. **This amount is $1,430,792.00**.

### Environmental and Regulatory Compliance Costs

Prior to awarding financial assistance, Reclamation must first ensure compliance with Federal environmental and cultural resources laws and other regulations ("environmental compliance"). Every project funded under this program will have environmental compliance costs associated with activities undertaken by Reclamation and the recipient.

To estimate environmental compliance costs, please contact compliance staff at your local Reclamation Office for additional details regarding the type and costs of compliance that may be required for your project. Note, support for your compliance costs estimate will be considered during review of your application. Contact the Program Coordinator (see Section G. Agency Contacts) for Reclamation contact information regarding compliance costs and requirements.

Environmental compliance costs are considered project costs and must be included as a line item in the project budget and will be cost shared accordingly.

The amount of the line item should be based on the actual expected environmental compliance costs for the project, including Reclamation's cost to review environmental compliance documentation. Environmental compliance costs will vary based on project type, location, and potential impacts to the environment and cultural resources.

How environmental compliance activities will be performed (e.g., by Reclamation, the applicant, or a consultant) and how the environmental compliance funds will be spent, will be determined pursuant to subsequent agreement between Reclamation and the applicant. The amount of funding required for Reclamation to conduct any environmental compliance activities, including Reclamation's cost to review environmental compliance documentation, will be withheld from the Federal award amount and placed in an environmental compliance account to cover such costs. If any portion of the funds budgeted for environmental compliance is not required for compliance activities, such funds may be reallocated to the project, if appropriate.

Costs associated with environmental and regulatory compliance must be included in the budget. Compliance costs include costs associated with any required documentation of environmental compliance, analyses, permits, or approvals. Applicable Federal environmental laws could include NEPA, ESA, NHPA, CWA, and other regulations depending on the project. Such costs may include, but are not limited to:

The cost incurred by Reclamation to determine the level of environmental compliance required for the project

The cost incurred by Reclamation, the recipient, or a consultant to prepare any necessary environmental compliance documents or reports

The cost incurred by Reclamation to review any environmental compliance documents prepared by a consultant

The cost incurred by the recipient in acquiring any required approvals or permits, or in implementing any required mitigation measures

## Environmental and Cultural Resources Compliance

## 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.

Note that improvements to Federal facilities that are implemented through any project awarded funding through this FOA must comply with additional requirements. The Federal government will continue to hold title to the Federal facility and any improvement that is integral to the existing operations of that facility. Please see P.L. 111-11, Section 9504(a)(3)(B). Reclamation may also require additional reviews and approvals prior to award to ensure that any necessary easements, land use authorizations, or special permits can be approved consistent with the requirements of 43 CFR Section 429, and that the development will not impact or impair project operations or efficiency.

## Letters of Project Support

Please include letters from interested stakeholders supporting the proposed project. To ensure your proposal is accurately reviewed, please attach all letters of support/ partnership letters as an appendix. Letters of support received after the application deadline for this FOA will not be considered in the evaluation of the proposed project.

Letters of Support are attached as Attachment 6. Idaho Conservation League (ICL) blog article in support of our efforts is Attachment 9.

## Official Resolution

The Mayor and City Council adopted Resolution No. 2019-007R on March 14, 2019. The signed resolution is included as Attachment 7.

The text of the resolution as adopted is printed below:

**RESOLUTION NUMBER 2019-007R**

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AMMON, IDAHO AUTHORIZING THE CITY ADMINISTRATOR, ON BEHALF OF THE CITY COUNCIL, TO APPLY FOR FEDERAL GRANT FUNDING

FOR THE WATER METER INSTALLATION PROJECT AND ALLOCATING THE REQUIRED PUBLIC FUNDS TO COMPLETE THE METER INSTALLATION PROJECT AS DEFINED IN THE GRANT APPLICATION

WHEREAS, the City operates a public water system that delivers potable water to all customers for culinary and irrigation purposes; and

WHEREAS, the City of Ammon began installing water meters after several decades of installing water service lines without water meters; and

WHEREAS, the City Council has adopted metered water rates that will provide the necessary funds to maintain and sustain the public water system; and

WHEREAS, after adoption of metered water rates, there remains customers on the public water system that are unmetered, resulting in adverse water conservation impacts; and

WHEREAS, the City Council intends to minimize the amount of time when there are any unmetered customers; and

WHEREAS, the City Council has directed the City Administrator to apply for federal grant funds offered by the Bureau of Reclamation through the WaterSMART Grant: Water and Energy Efficiency Grants for Fiscal Year 2019 with Funding Opportunity Number (FOA) BOR-DO-19-F004 for the Water Meter Installation Project; and

WHEREAS; the City of Ammon is a duly recognized municipality within the State of Idaho and is vested with the legal authority to apply for said grant funds and enter into an agreement with the Federal Government; and

WHEREAS; the Mayor and City Council of the City of Ammon, Idaho, have reviewed the application and support submitting the application for grant funding; and

WHEREAS, by application through FOA BOR-DO-19-F004, the City of Ammon is requesting $300,000.00 in grant funds through this funding opportunity; an

WHEREAS, the City of Ammon is providing $2,293,371.00 from existing funds, equating to 88% of the total project costs; and

WHEREAS, the City of Ammon is currently in possession of all funds and materials to provide up to $2,293,371.00 to complete the project; and

WHEREAS, Exhibit A to this resolution is the completed grant application for Funding Opportunity Number (FOA) BOR-DO-19-F004, requesting $300,000.00 in federal funds for the Water Meter Installation Project; and

WHERAS, the Mayor and City Council commit to working with the Bureau of Reclamation to meet established deadlines for entering into a grant or cooperative agreement; and

WHEREAS, the effective date of this resolution shall be March 14, 2019; and

NOW, THEREFORE, BE IT RESOLVED by the Mayor and the City Council of Ammon, Idaho that the City Council hereby directs the City Administrator to submit an application for federal grant funds offered by the Bureau of Reclamation through the WaterSMART Grant: Water and Energy Efficiency Grants for Fiscal Year 2019 with Funding Opportunity Number (FOA) BOR-DO-19-F004 for the Water Meter Installation Project and authorizes the allocation of city funds for the Water Meter Installation project, as described in Exhibit A to this resolution.

This Resolution will be in full force and effect upon its adoption this fourteenth (14) day of March, 2019.

CITY OF AMMON

_____
Sean Coletti, Mayor

ATTEST:

_____
Rachael Sanders,
City Clerk

## Unique Entity Identifier and System for Award Management

All applicants (unless the applicant has an exception approved by Reclamation under 2 CFR §25.110[d]) are required to:

(i) Be registered in the System for Award Management (SAM) before submitting its application;

The City of Ammon is registered in the System for Award Management.

(ii) Provide a valid unique entity identifier in its application; and

The City of Ammon's federal employer identification number is 82-0255219. The City of Ammon's DUNS number is 028477925. The City's MPIN is afd20city.

(iii) Continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency.

The City of Ammon will maintain an active SAM registration number at all times during which it has an active Federal award or an application under consideration.

OMB Number: 4040-0004
Expiration Date: 12/31/2019

## Application for Federal Assistance SF-424

| * 1. Type of Submission: | * 2. Type of Application: | * If Revision, select appropriate letter(s): |
|---|---|---|
| ☐ Preapplication | ☒ New | |
| ☒ Application | ☐ Continuation | * Other (Specify): |
| ☐ Changed/Corrected Application | ☐ Revision | |

| * 3. Date Received: | 4. Applicant Identifier: |
|---|---|
| 03/15/2019 | |

| 5a. Federal Entity Identifier: | 5b. Federal Award Identifier: |
|---|---|
| | |

**State Use Only:**

| 6. Date Received by State: | 7. State Application Identifier: |
|---|---|
| | |

**8. APPLICANT INFORMATION:**

| | |
|---|---|
| * a. Legal Name: | City of Ammon |
| * b. Employer/Taxpayer Identification Number (EIN/TIN): | 82-0255219 |
| * c. Organizational DUNS: | 0284779250000 |

**d. Address:**

| | |
|---|---|
| * Street1: | 2135 S. Ammon Rd |
| Street2: | |
| * City: | Ammon |
| County/Parish: | Bonneville |
| * State: | ID: Idaho |
| Province: | |
| * Country: | USA: UNITED STATES |
| * Zip / Postal Code: | 83406-6855 |

**e. Organizational Unit:**

| Department Name: | Division Name: |
|---|---|
| General Department | City Administrator |

**f. Name and contact information of person to be contacted on matters involving this application:**

| | | | |
|---|---|---|---|
| Prefix: | Mr. | * First Name: | Micah |
| Middle Name: | Rich | | |
| * Last Name: | Austin | | |
| Suffix: | | | |

| | |
|---|---|
| Title: | City Administrator |
| Organizational Affiliation: | Chief Operating Officer |
| * Telephone Number: | 208-612-4051 |
| Fax Number: | 208-612-4009 |
| * Email: | maustin@cityofammon.us |

## Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

C: City or Township Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Bureau of Reclamation

**11. Catalog of Federal Domestic Assistance Number:**

15.507

CFDA Title:

*** 12. Funding Opportunity Number:**

BOR-DO-19-F004

* Title:

Water SMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2019

**13. Competition Identification Number:**

Title:

**14. Areas Affected by Project (Cities, Counties, States, etc.):**

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Water Meter Installation Project- Funding Group I

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

## Application for Federal Assistance SF-424

**16. Congressional Districts Of:**

* a. Applicant: ID-2 * b. Program/Project: n/a

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

**17. Proposed Project:**

* a. Start Date: 05/01/2019 * b. End Date: 07/01/2021

**18. Estimated Funding ($):**

| | |
|---|---|
| * a. Federal | 300,000.00 |
| * b. Applicant | 2,293,371.00 |
| * c. State | |
| * d. Local | |
| * e. Other | |
| * f. Program Income | |
| * g. TOTAL | 2,593,371.00 |

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

**21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

**Authorized Representative:**

Prefix: Mr. * First Name: Micah

Middle Name: Rich

* Last Name: Austin

Suffix:

* Title: City Administrator

* Telephone Number: 208-612-4051 Fax Number: 208-612-4009

* Email: maustin@cityofammon.us

* Signature of Authorized Representative: [signature] * Date Signed: 3/13/2019

OMB Number: 4040-0008
Expiration Date: 01/31/2019

Attachment 2

## BUDGET INFORMATION - Construction Programs

*NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.*

| COST CLASSIFICATION | a. Total Cost | b. Costs Not Allowable for Participation | c. Total Allowable Costs (Columns a-b) |
|---|---|---|---|
| 1. Administrative and legal expenses | $ 0.00 | $ | $ 0.00 |
| 2. Land, structures, rights-of-way, appraisals, etc. | $ 0.00 | $ | $ 0.00 |
| 3. Relocation expenses and payments | $ 0.00 | $ | $ 0.00 |
| 4. Architectural and engineering fees | $ 0.00 | $ | $ 0.00 |
| 5. Other architectural and engineering fees | $ 0.00 | $ | $ 0.00 |
| 6. Project inspection fees | $ 0.00 | $ | $ 0.00 |
| 7. Site work | $ 1,430,792.00 | $ | $ 1,430,792.00 |
| 8. Demolition and removal | $ 0.00 | $ | $ 0.00 |
| 9. Construction | $ 0.00 | $ | $ 0.00 |
| 10. Equipment | $ 926,818.00 | $ | $ 926,818.00 |
| 11. Miscellaneous | $ 0.00 | $ | $ 0.00 |
| 12. SUBTOTAL *(sum of lines 1-11)* | $ 2,357,610.00 | $ | $ 2,357,610.00 |
| 13. Contingencies | $ 235,761.00 | $ | $ 235,761.00 |
| 14. SUBTOTAL | $ 2,593,371.00 | $ | $ 2,593,371.00 |
| 15. Project (program) income | $ 0.00 | $ | $ 0.00 |
| 16. TOTAL PROJECT COSTS *(subtract #15 from #14)* | $ 2,593,371.00 | $ | $ 2,593,371.00 |

| FEDERAL FUNDING | | |
|---|---|---|
| 17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share. | Enter eligible costs from line 16c Multiply X 11 % 11.57% = | $ 285,270.81 300,000.00 |

# ASSURANCES - CONSTRUCTION PROGRAMS

OMB Number: 4040-0009
Expiration Date: 01/31/2019



PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant:, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards of merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29) U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L . 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statue(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statue(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.

14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq).

18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

20. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

| SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL | TITLE |
|---|---|
|  | City Administrator |
| APPLICANT ORGANIZATION | DATE SUBMITTED |
| City of Ammon | 3/14/2019 |

SF-424D (Rev. 7-97) Back

# DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

Approved by OMB
4040-0013

**1. * Type of Federal Action:**
- [ ] a. contract
- [x] b. grant
- [ ] c. cooperative agreement
- [ ] d. loan
- [ ] e. loan guarantee
- [ ] f. loan insurance

**2. * Status of Federal Action:**
- [ ] a. bid/offer/application
- [x] b. initial award
- [ ] c. post-award

**3. * Report Type:**
- [x] a. initial filing
- [ ] b. material change

**4. Name and Address of Reporting Entity:**

[x] Prime [ ] SubAwardee

*Name: City of Ammon

*Street 1: 2135 S. Ammon Rd  Street 2:

*City: Ammon  State: ID: Idaho  Zip: 83406

Congressional District, if known: ID-2

**5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:**

**6. * Federal Department/Agency:**

Bureau of Reclamation

**7. * Federal Program Name/Description:**

WaterSMART: Water and Energy Efficiency Grants for Fiscal Year 2019 Category I

CFDA Number, *if applicable:* 15.507

**8. Federal Action Number,** *if known:*

**9. Award Amount,** *if known:*

$ 1,037,348.00

**10. a. Name and Address of Lobbying Registrant:**

Prefix:  *First Name: City does not employ a lobbyist  Middle Name:

*Last Name: City does not employ a lobbyist  Suffix:

*Street 1:  Street 2:

*City:  State:  Zip:

**b. Individual Performing Services** (including address if different from No. 10a)

Prefix:  *First Name:  Middle Name:

*Last Name:  Suffix:

*Street 1:  Street 2:

*City:  State:  Zip:

**11.** Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

*** Signature:**

***Name:** Prefix:  *First Name: Micah  Middle Name: Rich

*Last Name: Austin  Suffix:

**Title:** City Administrator  **Telephone No.:** 208-612-4051  **Date:** 03/13/2019

**Federal Use Only:**

Authorized for Local Reproduction
Standard Form - LLL (Rev. 7-97)

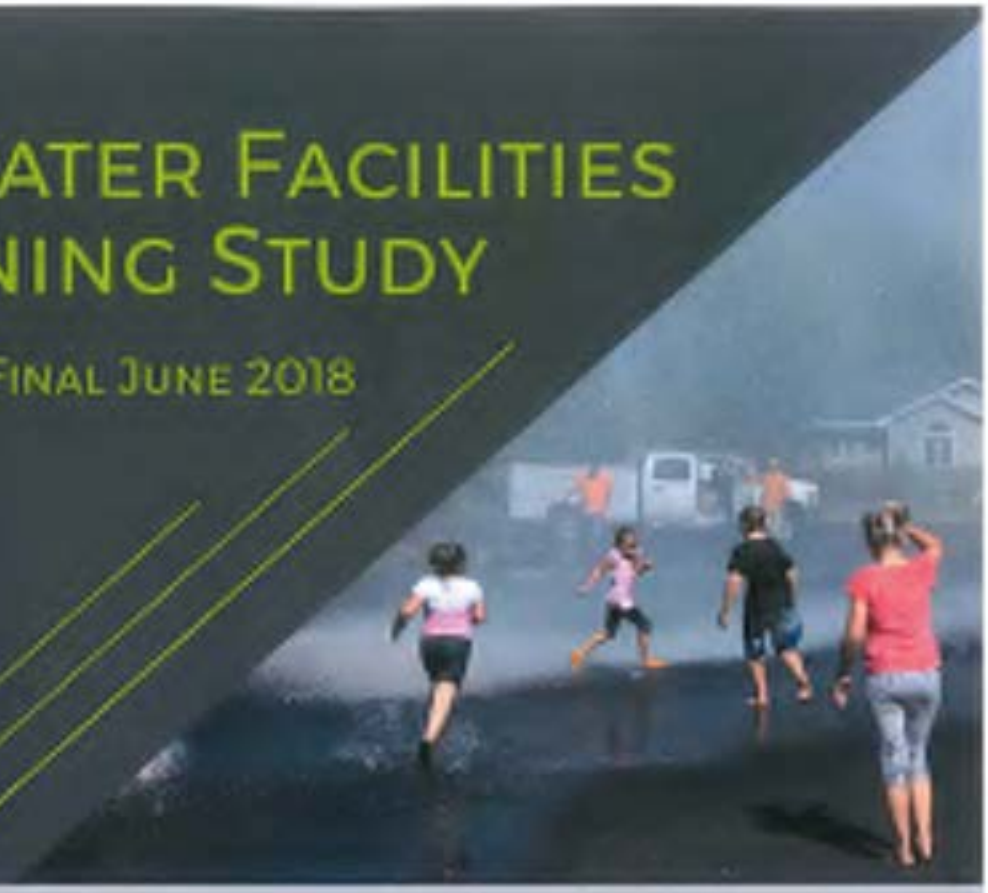
Attachment 5

# Excerpts from the Ammon Water Facilities Planning Study (AWFPS)

# To access the full study, please visit the City of Ammon's website at: http://b.ci.ammon.id.us/water/

# Ammon Water Facilities Planning Study

Draft March 2018, Final June 2018



KELLER ASSOCIATES

# Introduction

## Purpose and Need for Project

The last system-wide water study for the City of Ammon was completed in 2006 as part of a Regional Water Planning study that included Falls Water and Ucon. Since that study, The City of Ammon has completed several major water projects and has seen significant growth. Major water projects since the 2006 study include the Well 8 tank and booster station, the Hill Tank and booster station, the Well 9 improvements, and various transmission line projects. The City of Ammon has completed several localized studies recently that looked at portions of the water system. These studies include the Well 6 Pump Station Evaluation completed in 2014 and the Communities Master Plan completed in 2016. These studies identified water system deficiencies and made recommendations for improvements, but did not look at the water system as a whole.

The City of Ammon commissioned this Water Facilities Planning Study to evaluate and make recommendations for the water system as a whole. The recommendations from this study will allow the City Council to prioritize, plan, and budget system improvements for the system as a whole rather than piecemeal. The recommendations from prior localized studies have been incorporated into this study.

## Plan of Study and Report Organization

Chapter 1 describes the City of Ammon's existing drinking water system consisting of wells, tanks, booster stations, and transmission and distribution piping. Chapter 2 describes the existing environmental conditions in the planning area. Chapter 3 outlines the planning criteria which form the basis of the water system evaluation and resulting recommendations. Chapter 4 forecasts water system demands by establishing current production and applying current per capita usage to growth projections. Chapter 5 describes the results of the computerized system analysis that was used to identify distribution system deficiencies. Chapter 6 contains a supply, storage, and delivery evaluation for the system as a whole and for each individual pressure zone. Chapter 7 includes the initial and final screening of alternatives to address deficiencies that were identified in Chapters 5 and 6. Chapter 8 lists prioritized improvements with costs in the Capital Improvements Plan. Chapter 9 is a discussion of funding and user rates.

## Project Implementation

The City recognizes that they must maintain their water system infrastructure in order to be able to continue providing reliable water service to current residents, and to be able to provide water service to new businesses and developments who want to locate in Ammon. Growing system demands, calls on water rights, and water system repairs have kept water system issues forefront for City elected officials.

In order to better inform the public and to gather support for needed improvements, the Mayor appointed a water committee comprised of residents from varying backgrounds. This committee met several times in 2017, and again in 2018 to discuss water conservation measures including water meters and implementing meter-based user rates. As this Water Facilities Planning has progressed, the Mayor invited us to come present early findings and alternatives to the water committee for their consideration. Discussions in these water committee meetings and subsequent City Council meetings have led to a plan to implement a meter-based user rate structure with an increase in user rates that will allow the City to pay for water system improvements as they are needed rather than borrow the money to pay for improvements.

The City has the technical, financial, and managerial resources to implement the recommendations of this study.

# 1 EXISTING SYSTEM

This chapter summarizes existing source, storage, and distribution conditions for the City of Ammon's drinking water system. As part of this description, Keller Associates compiled system documentation from the City's records into a system inventory included in Appendix A: Water System Facilities Records. Regulatory requirements and design criteria are presented in Chapter 3 as they pertain to the City's water system. The Idaho Department of Environmental Quality (IDEQ) sets rules "to control and regulate the design, construction, operation, maintenance, and quality control of public drinking water systems to provide a degree of assurance that such systems are protected from contamination and maintained free from contaminants which may injure the health of the consumer."[1]

The City's water system, which is described in greater detail in the following sections, is comprised of five pressure zones (only 3 of which are currently active), nine ground water wells (three are currently inactive), three water storage tanks (one is currently inactive), and four booster stations (one is currently inactive). Figure 1.1 shows the locations of the wells, tanks, and boosters, and Figure 1.2 shows the pressure zone boundaries which are discussed further in Section 1.3.2.

## 1.1 WATER SOURCES

Currently, all of Ammon's potable water supply comes from groundwater from the Eastern Snake River Plain Aquifer. Recharge of the aquifer comes from the Snake River, the Teton River, and numerous small streams and canals. Water is removed from the aquifer by numerous small groundwater users (such as private wells serving individual homes), industrial wells, and large scale agricultural pumping, in addition to public wells operated by municipalities.

Ammon has nine wells to meet the water demands of the City. Wells 3, 5, and 6 are currently inactive due to needed repairs and changes in the operation of the system. Table 1.1 summarizes attributes of each of the wells. While there is currently no treatment taking place in the Ammon water system, the Well 6, Well 8, and Hill Tank pump stations are outfitted with chlorination equipment should the need arise.

[1] Idaho Department of Environmental Quality. (2012). Idaho Rules for Public Drinking Water Systems. Retrieved April 13, 2017 from https://adminrules.idaho.gov/rules/2012/58/0108.pdf

### 2.2.4 Fauna, Flora & Natural Communities

The Yellow-billed Cuckoo is the only endangered species that could be potentially harmed by activity in this area.[5] However, there is no critical habitat listed for this area.

### 2.2.5 Land Use & Development

Figure 2.5 shows an estimate of land uses across Ammon's Area of Impact. The majority of this area is either developed land or cultivated crops, with some areas of grasslands and scrub on the foothills.

Ammon continues to grow in size and population. Housing, industrial, and commercial development have all grown relatively in proportion with one another. Section 2.2.12 further discusses land use and development.

### 2.2.6 Cultural Resources

There are no buildings listed by the National Register of Historic Places.[6]

### 2.2.7 Utility Use

Culinary water is provided to the residents of Ammon exclusively by groundwater pumped from wells (either through the City or through Falls Water Company). The City of Ammon planning area is served by Rocky Mountain Power for all of its electrical needs. Minimizing electrical consumption is an important consideration when considering system upgrades or expansion. In cases where it is necessary to utilize electrical power for purposes such as pumping, it is important to consider efficient components and operational procedures. The City's operational strategy is intended to minimize unnecessary start and stop of pumps to avoid excess power use.

Much of the system's water connections are metered and the City plans to eventually meter all usage. The water meters are typically read year round on a monthly basis. See Chapter 4 for more information on the state of the City's metering efforts.

[5] U.S. Fish & Wildlife Service. Information for Planning and Consultation. Endangered Species. Retrieved March 23, 2017 from https://ecos.fws.gov/ipac/location/B567NFROCVGJXLUUYMCDN34G74/resources#endangered-species

[6] National Park Service. (2015, September). National Register of Historic Places. Retrieved April 12, 2017, from http://www.nps.gov/nr/research/

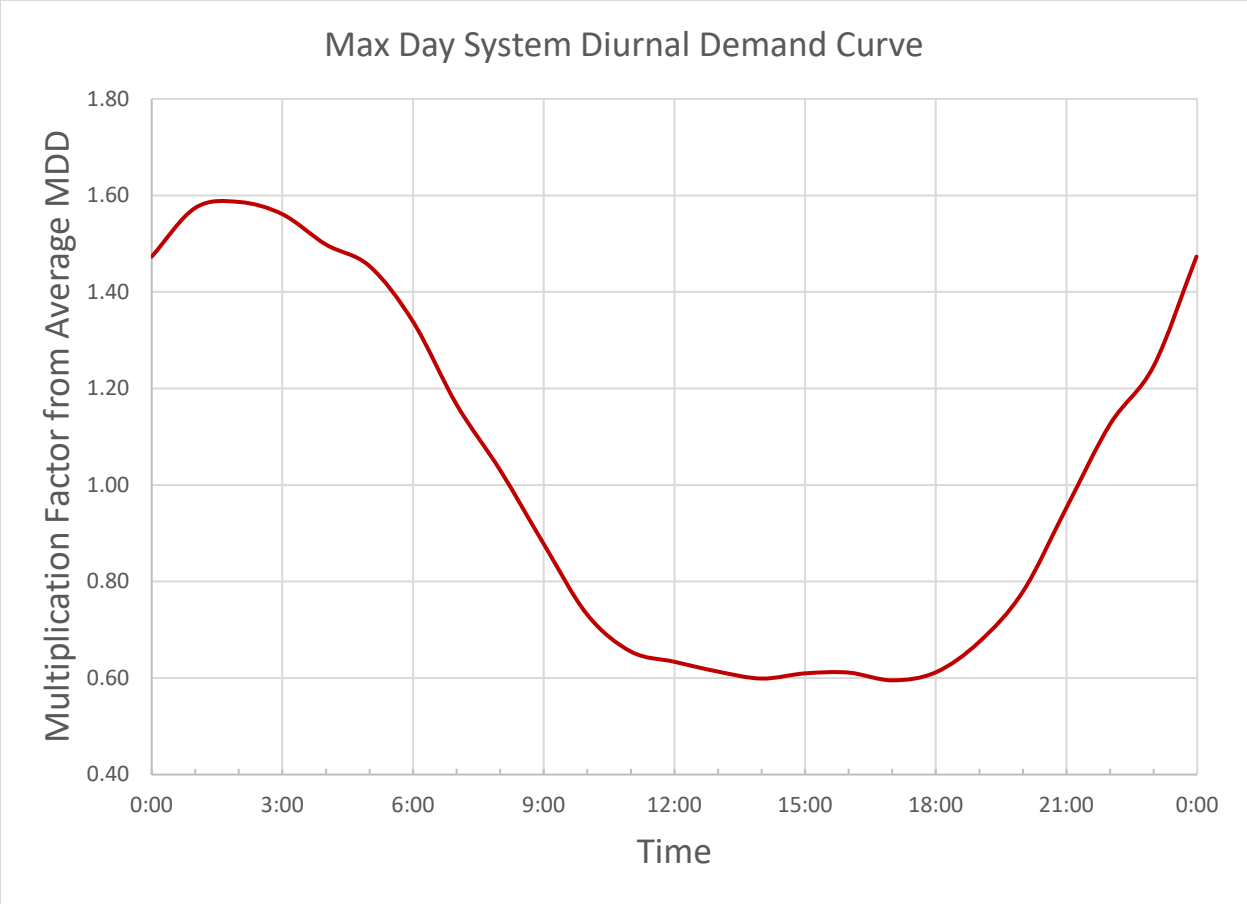



Figure 4.3: Summer Water Usage Pattern

A peak hour demand equivalent of approximately 1.59 times the corresponding daily average demand is anticipated around 2:00 a.m. during the summer months. The lowest system demands are about 0.6 times the corresponding average daily demand and occur from around noon until 5:00 p.m.

## 4.5 WATER METER DATA

The City of Ammon requires installation of meters on all new residential or commercial construction or when such properties are being renovated if no meter is present[3]. The water department has a stockpile of meter pits and meters. These are installed whenever a service line with no meter is repaired or replaced. In addition to these new installations, the water department is also working their way through existing meters to fix meters that were incorrectly installed, are hard to access, or that show signs of inaccuracy.

Table 4.7 shows the progress of meter installation as reported by the City in early 2017 when Keller Associates obtained current metering data. Residential and commercial meters are read year round on a monthly basis and most of the City's meters are the radio-read type. The City has the ability to tie metered usage to their customer billing program but does not currently report usage or charge base on consumption (see Chapter 9 for more detail regarding the City's rate structure). Keller

[3] City of Ammon. (2014). City Code Title 8 Chapter 3. Retrieved March 16, 2018 from http://public.cityofammon.us/weblink/.

Associates' experience with other communities in Idaho has been that the implementation of a flow-based rate structure leads to reductions in usage of as much as 20-30%.

Table 4.7: Ammon Metering Progress

| Water User Type | Estimated % Metered |
|---|---|
| Commercial/Institutional | 59% |
| City Landscaping | 100% |
| Residential (small lot) | 55% |
| Residential (large lot) | 66% |
| Apartments | 30% |
| Parks | 17% |
| **City Overall** | **60%** |

With a significant portion of users still to be metered, a reliable breakdown of consumption by water user type is not yet available. Such an analysis would be just one benefit of many to having all customers metered:

- Equitable assessment of monthly service fees based on usage; small users would no longer be subsidizing large users
- Track trends and changes in usage among different user types
- Homeowner awareness of consumption and effects of conservation
- Ability to bill based on actual usage; financial incentive to conserve
- Awareness of users who water in excess or who may have leaks
- Ability to gauge the effectiveness of conservation education efforts
- Target conservation education efforts to neighborhoods with excessive use
- Allow for water auditing procedures which help to identify non-revenue water

Non-revenue water, mentioned in the last bullet, is water produced by the system that is not delivered to paying customers. Some non-revenue water goes to authorized uses (e.g. hydrant flushing, park watering), while some does not (e.g. water theft, loss to system leaks, metering inaccuracies, etc.). Better metering data is key to identifying non-authorized, non-revenue water usage so that the City can maximize the amount of production costs that are recouped.

Metering also allows City staff to identify excessive water use. From the metering data provided by the City, Keller Associates was able to identify the twenty metered connections with the highest peak month usage for the summer of 2016. These values are presented in Table 4.8 and were later used in the hydraulic model developed in Chapter 5. Addresses have been removed to protect privacy; however, customer numbers are included for City use. More than half of the accounts shown below are residential, almost all of which are on larger, RP or RPA zoned lots. These lots used an average of 16,000-67,000 gallons per day in July of 2016.

# 7 IMPROVEMENT ALTERNATIVES

This chapter outlines the development and screening of specific supply, storage, delivery, and transmission improvement alternatives proposed to address the deficiencies identified in Chapters 5 and 6. In addition to construction of new facilities, this chapter evaluates whether optimization of existing infrastructure is an option and what the consequences of taking no action might be.

## 7.1 REGIONALIZATION

Ammon's water system is surrounded by four adjacent water systems: Idaho Falls to the west, Falls Water Company to the north, Comore Loma Water Corporation, and Blackhawk Water to the southeast. Comore Loma and Blackhawk are located in close enough proximity that a regionalization effort would be attractive, though this may be an option later on if the two systems expand to touch each other. Falls Water provides service to certain areas of Ammon that were previously unannexed (see Figure 1.1). At this point, no serious discussion of a possible regionalization effort between Idaho Falls, Falls Water, and/or Ammon has taken place. With no need for a centralized treatment facility in any of these systems, storage and supply assets are localized and there would likely be little "economy of scale" type of benefit to regionalizing. This alternative will not be considered further.

## 7.2 SUPPLY ALTERNATIVES

These alternatives address the deficit between firm capacity and maximum day demand.

### 7.2.1 No Action

The City's supply firm capacity is currently at a slight deficit as compared to maximum day demand. Without additional sources of supply or a reduction in demand, the system will be out of compliance with state regulations. In this scenario the City would not be able to issue a "Will Serve" determination to new development seeking access to the municipal water system, essentially stopping further growth.

### 7.2.2 Optimization of Existing Facilities

There are multiple options available to maximize the impact of Ammon's existing supply infrastructure:

**Water Metering:** Ammon's current metering status was discussed in Chapter 1. The City is currently pursuing the implementation of a flow-based user rate and anticipates that a reduction in demand will follow. Knowing that the volume consumed directly impacts one's bill tends to incentivize conservation. Keller Associates has seen such results in multiple communities throughout the region that have taken a similar course of action (as much as 20-30% in some cases). As the actual long-term reduction in demand resulting from a flow-based rate is uncertain, its effects have not been included in the evaluation made by this study.

If significant usage reduction is achieved, this could serve as a short term supply deficit solution; however, reductions are not likely to be sufficient over the entire 20-year planning horizon. If the City adopts a flow-based rate, change in usage should be tracked over several years (once customer usage patterns have stabilized) to determine the long-term impacts to per capita demand. The future demands presented in this study could then be decreased accordingly, if appropriate, effectively prolonging the sufficiency of any new supply constructed to meet current deficiencies.

### 7.7.1 Results of Initial Screenings

Table 7.8 provides a summary of the viable alternatives discussed in the respective initial screening in previous sections of this chapter.

Table 7.8: Summary of Initial Screening

| Supply | Storage | Delivery | Distribution | Water Rights |
|---|---|---|---|---|
| Metering and Conservation Education | Operational Storage Adjustments | Metering and Conservation Education | Optimize Transmission to The Cottages and Quail Ridge | Metering and Conservation Education |
| Well 6 Rehab | Well 6 Tank Rehab | Optimize Pump Set Points | Aging Line Replacement | Purchase Additional Water Rights |
| Woodland Hills Well | Second tank at Well 6 | Well 6 Booster Rehab | Looping Lines (various locations) | Water Banking and Mitigation |
| | Woodland Hills Tank | Woodland Hills Booster Station | | |
| | | Zone 2 Split (both options) | | |

As storage capacity is the most critical existing need, it is unlikely that the City will want to pursue a well project that does not also include a tank. The Well 6 rehabilitation projects (tank, well, and boosters) would all need to be completed together to be advantageous. The Woodland Hills projects are likewise essentially a single project for this reason. In comparing these two alternatives it became clear that although there are cost efficiencies to rehabilitating the existing infrastructure at Well 6, this alternative is not capable of providing enough storage to correct the existing deficit of 1.6 MG (1.0 MG available if second tank at Well 6 were constructed). If the Well 6 improvements were constructed, a second well and tank project would also need to take place to make up the difference. Additionally, the Well 6 complex does little to correct the system supply and pressure issues that are experienced by the more isolated areas on the south end of Ammon.

In discussions with the City this led to the conclusion that while improvements at Well 6 should still be pursued at some point in the future, the Woodland Hills alternative (which could be sized to cover the entire storage deficit) would be the City's preferred well, tank, and booster alternative for correcting current system deficiencies.

There are several good options for optimizing existing infrastructure. There is also a category of alternatives that are purely operational or that have relatively small capital costs. As there is minimal cost to pursuing these, we recommend that these alternatives be pursued and that only new construction alternatives (including rehabilitation of existing infrastructure) be considered in

the final cost and environmental screening process. This simplified approach is shown in Table 7.9.

Table 7.9: Alternatives Moving to Final Screening

| Low Cost/Operational | New Construction/Purchase |
|---|---|
| Metering and Conservation Education | Woodland Hills Complex |
| Operational Storage Adjustments | Well 6 Complex Rehabilitation and Expansion[2] |
| Optimize Pump Set Points | Purchase Additional Water Rights |
| Optimize Transmission to The Cottages and Quail Ridge | [3]Zone 2 Split: Pumps at Pump Station 9 |
| Water Banking and Mitigation[1] | [3]Zone 2 Split: Inline Pumps on 21st St |
| | Aging Line Replacement |
| | Looping Lines |

[1] The Water Banking and Mitigation alternative is currently shown in the "low cost" category as the City is still in the investigational phase and exploring what options are available at this point.
[2] The Well 6 Complex was eliminated as a final alternative, but will be included in the Capital Improvement Plan and constructed at a later date.
3 A selection between the two "Zone 2 Split" options will be made in following sections.

As Table 7.9 indicates, only the Zone 2 Split options result in competing alternatives that require further evaluation through cost comparison and environmental impact. The environmental analysis will be completed for all new construction projects to identify any critical concerns.

### 7.7.2 Capital Costs

Table 7.10 provides a comparison of the capital costs associated with the two Zone 2 Split alternatives. As both alternatives would require approximately the same net pumping horsepower to achieve the target upper zone pressures, it is expected that the difference in electrical pumping costs will be minimal. The effective lifespan of respective pump and control components is also believed to be comparable. Because of the resulting similar nature of O&M costs between these two alternatives, it was decided that a present worth analysis (taking cost over time into account) was not warranted and that a comparison of capital costs would be sufficient.

CITY OF Ammon

Date: 3-14-2018

To: Bureau of Reclamation, Policy and Administration, Department of the Interior

From: Mayor Sean Coletti

Subject: Support for City of Ammon application for WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2019, FOA No. BOR-DO-19-F004

To Whom It May Concern:

My name is Sean Coletti and I'm the Mayor of the City of Ammon. I am writing in strong support of the city's application for federal grant funds for our Meter Installation Project.

One of my priorities as Mayor is to conserve our water resources through installing a meter at every location in the City of Ammon. Installation of water service meters in the 916 location identified in the grant application will save more than 350 acre feet of water over 20 years. Retaining water in the aquifer helps all groundwater users that rely upon the Eastern Snake River Plain Aquifer. The city is pursuing other water conservation measures that also contribute to this effort, such as requiring surface water for all outside irrigation in new developments.

For these reasons, I support the city's application to receive grant funding from the Bureau of Reclamation. Please contact me with any questions regarding this letter, and thank you for your consideration.

Sincerely,

Sean Coletti

Mayor

Attachment 7

# CITY OF AMMON
# BONNEVILLE COUNTY, IDAHO

## RESOLUTION NUMBER 2019-007R

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AMMON, IDAHO AUTHORIZING THE CITY ADMINISTRATOR, ON BEHALF OF THE CITY COUNCIL, TO APPLY FOR FEDERAL GRANT FUNDING FOR THE WATER METER INSTALLATION PROJECT AND ALLOCATING THE REQUIRED PUBLIC FUNDS TO COMPLETE THE METER INSTALLATION PROJECT AS DEFINED IN THE GRANT APPLICATION

WHEREAS, the City operates a public water system that delivers potable water to all customers for culinary and irrigation purposes; and

WHEREAS, the City of Ammon began installing water meters after several decades of installing water service lines without water meters; and

WHEREAS, the City Council has adopted metered water rates that will provide the necessary funds to maintain and sustain the public water system; and

WHEREAS, after adoption of metered water rates, there remains customers on the public water system that are unmetered, resulting in adverse water conservation impacts; and

WHEREAS, the City Council intends to minimize the amount of time when there are any unmetered customers; and

WHEREAS, the City Council has directed the City Administrator to apply for federal grant funds offered by the Bureau of Reclamation through the WaterSMART Grant: Water and Energy Efficiency Grants for Fiscal Year 2019 with Funding Opportunity Number (FOA) BOR-DO-19-F004 for the Water Meter Installation Project; and

WHEREAS; the City of Ammon is a duly recognized municipality within the State of Idaho and is vested with the legal authority to apply for said grant funds and enter into an agreement with the Federal Government; and

WHEREAS; the Mayor and City Council of the City of Ammon, Idaho, have reviewed the application and support submitting the application for grant funding; and

WHEREAS, by application through FOA BOR-DO-19-F004, the City of Ammon is requesting $300,000.00 in grant funds through this funding opportunity; an

WHEREAS, the City of Ammon is providing $2,293,371.00 from existing funds, equating to 88% of the total project costs; and

WHEREAS, the City of Ammon is currently in possession of all funds and materials to provide up to $2,293,371.00 to complete the project; and

WHEREAS, Exhibit A to this resolution is the completed grant application for Funding Opportunity Number (FOA) BOR-DO-19-F004, requesting $300,000.00 in federal funds for the Water Meter Installation Project; and

WHERAS, the Mayor and City Council commit to working with the Bureau of Reclamation to meet established deadlines for entering into a grant or cooperative agreement; and

WHEREAS, the effective date of this resolution shall be March 14, 2019; and

NOW, THEREFORE, BE IT RESOLVED by the Mayor and the City Council of Ammon, Idaho that the City Council hereby directs the City Administrator to submit an application for federal grant funds offered by the Bureau of Reclamation through the WaterSMART Grant: Water and Energy Efficiency Grants for Fiscal Year 2019 with Funding Opportunity Number (FOA) BOR-DO-19-F004 for the Water Meter Installation Project and authorizes the allocation of city funds for the Water Meter Installation project, as described in Exhibit A to this resolution.

This Resolution will be in full force and effect upon its adoption this fourteenth (14) day of March, 2019.

CITY OF AMMON

Sean Coletti, Mayor

CITY OF AMMON, INC. CORPORATE SEAL 1961 IDAHO

ATTEST:

Rachael Sanders, City Clerk

CITY OF Ammon

Date: September 30, 2019

To: BOR-DO-19-F004 Application Review Committee

From: City of Ammon, Idaho

Micah Austin, City Administraor

Subject: Justification for conservation estimates in City of Ammon grant application for funding from BOR-DO-20-F001 - WaterSMART Water and Energy Efficiency Grants for Fiscal Year 2020-21

In response to the email from Darren Olsen (see Attachment 1) on April 4, 2019, for a previous grant application, the following supplemental information is provided to the BOR-DO-19-F004 Application Review Committee to further justify our water savings estimates:

***Questions*** and Answers

***Q1. You assume a 20% water savings in the first year and 0.5% savings compounded over the following 19 years (Table 1, p 8). Please provide justification for using these reduction amounts. Justification should include sample data and statistics (or a reference to a study using similar data) that shows the significant effect metering has on water savings. You reference the AWFPS done by Keller and Associates, June 2018. Although the AWFPS reports that similar metering projects have observed 20-30% reduction, no information is given in the report to justify these amounts.***

The 20% conservation assumption when moving to a metered rate system is based on two factors: 1) observed conservation in regional communities; and 2) academic basis and research that supports at least a 20% reduction along with the 0.5% savings in subsequent years. These factors are addressed separately below:

1. **Regional Observations.** The Ammon Water Facilities Planning Study (AWFPS) states on page 81, "According to the AWFPS, Keller Associates has seen such results in multiple communities throughout the region that have taken a similar course of action (as much as 20-30% in some cases). As the actual long-term reduction in demand resulting from a flow-based rate is uncertain, its effects have not been included in the evaluation made by this study." This engineering group, Keller Associates, has conducted several water studies for communities in our region and is well informed on the conservation reductions achieved through a metered rate system. Given the timeline provided by the Application Review Committee in the email documented in Exhibit 1, Keller Associates was not able to gather all data from these other community studies but would be happy to do this if granted more time. As stated in the memo in Exhibit 2, "The model used in this process [determining water rates] assumed a 20% reduction in water demand system-wide at the start of the new rate. This is consistent with the comments made in the Study (page 81) that, in our experience, other communities in our region have experienced conservation reductions as high as 20-30% upon implementing a metered rate for the first time."

In addition, the City utilized a rate development consultant, Econics, for developing a water meter rate. Econics was able to back up this 20% assumption with academic research and industry studies. This is discussed more fully in the next section. Even though Keller Associates has observed up to a 30% reduction within the region, we have been deliberately conservative in our assumptions with a 20% reduction rate.

2. **Academic Basis in Research**. In developing a meter rate, the City of Ammon employed the third-party water consultant, Econics, to verify our assumptions were correct and recommend a sustainable water rate. Econics is not mentioned in our grant application but they were consulted for the Ammon Water Facilities Planning Study (AWFPS), particularly as it pertains to water rates and water conservation assumptions. Econics evaluated the 20% conservation assumption and verified that this is reasonable and even somewhat conservative. Based on the following cited resources, a 20% savings is established in academic research and shown in other jurisdictions that publish reductions in water use in the vicinity of 20% when a community goes to a volume-based rate. Ammon has adopted a volume-based rate and these research assumptions apply. The following resources address this assumption:

    - *Alliance for Water Efficiency (AWE) (2010). Metering and Submetering: AWE Resource Library. Accessed at http://www.allianceforwaterefficiency.org/Metering_and_Submetering_Library_Content_Listing.aspx. Accessed 31 October 2018.*
    - Inman, D. and Jeffrey, P. (2007). A Review of Residential Water Conservation Tool Performance and Influences on Implementation Effectiveness. *Urban Water Journal*, Vol. 3(3), pp. 127-143.
    - Tanverakul S. and Lee, J. (2015). Impacts of Metering on Residential Water Use in California. *AWWA Journal.* Accessed at http://www.awwa.org/publications/journal-awwa/abstract/articleid/48274953.aspx. Accessed 31 October 2018.

    With respect to the projected 0.5% savings per year going forward, Econics reviewed this and believes this is a conservative assumption. Econics reported that most communities in North America within their customer base are achieving reductions in the vicinity of 2% to 3% per year on a per capita basis, primarily because of increasingly ubiquitous low flow toilets, front load washing machines, and less water use outdoors for lawn watering. There is no reason to believe consumption habits will yield different results in Ammon. The following resource substantiates this claim:

    - Water Research Foundation (WRF) (2016) Residential End Uses of Water, Version 2. Accessed at: http://www.waterrf.org/Pages/Projects.aspx?PID=4309

    Additional references and resources that substantiate our conservation assumptions are listed below:

    - Brandes, O., Renzetti, S., and Stinchcombe, K. (2010). Worth Every Penny: A Primer on Conservation-Oriented Water Pricing. POLIS Project on Ecological Governance, University of Victoria, Victoria BC, May 2010. Accessed at http://poliswaterproject.org/publication/344. Accessed on 1 November 2018.

- Grafton, Q., Ward, B., To, H., and Kompas, T. (2011). Determinants of Residential Water Consumption: Evidence and Analysis from a 10-Country Household Survey. Water Resources Research, Vol. 47.
- White, S. (1998). Wise Water Management: A Demand Management Manual for Water Utilities. Prepared by the Institute for Sustainable Future, University of Technology, Sydney. Prepared for the Water Services Association of Australia. Research Report No. 86.


***Q2: Please provide supporting calculations for 352.25 AF total water savings over a 20-year project life.***

In the 2018, our pump data shows the City of Ammon pumped 2,094,542,037.0 gallons, which converts to 6,427 acre feet (see Exhibit 3). The City of Ammon has a total of 4546 customers. The 916 customers discussed in the grant application represent 20.1% of all customers and consumption. Since these customers do not have meters, the total proportionate water pumping share for this customer group is 1,291 acre feet per year. From this number, we derived the initial 20% conservation savings in Year 1 and 0.5% savings in Years 2-20, thereby achieving the total savings of 352.25 acre feet (see Exhibit 4). Refer to the chart below:

**Table 1: Summary of Water Savings Assumptions**

| | |
|---|---|
| Water Volume Pumped in 2018 (Exhibit 3) | **6,427 acre feet (2,094,542,037 gallons)** |
| Total Customers | **4546** |
| 916 Customers Targeted for Water Meters | **20.1% of all customers** |
| Proportionate Water Share for 916 Customers | **1,291 acre feet** |
| Water Saved in Year 1 | **258.4 acre feet** |
| Water Saved in Years 2-20 | **93.9 acre feet** |
| Total Water Savings (Exhibit 4) | **352.25 acre feet** |

Please let me know if this answers the questions from the review committee.

Regards,

Micah Austin

City Administrator

City of Ammon, Idaho

**Exhibits:**

1. **Memo from Keller Associates written by Riley Bradshaw, PE, in response to supplemental questions from Grant Review Committee**
2. **City of Ammon Pumping Data from 2018**
3. **Calculations for Achieving Water Savings from installing 916 water service meters**

KELLER ASSOCIATES

3153 McNeil Drive
Idaho Falls, ID 83402
(208) 542-6120

**TO:** Micah Austin, City Administrator – City of Ammon

**FROM:** Riley D. Bradshaw, P.E.

**DATE:** April 8, 2019

**SUBJECT: Summary of Discussion of Conservation in the Ammon Water Facilities Planning Study**

Micah-

This memo is in response to the City of Ammon's request for documentation regarding the locations and extent to which conservation was discussed in the recently adopted Ammon Water Facilities Planning Study (the Study) produced by Keller Associates. Conservation and the adoption of a flow-based water rate were topics of discussion throughout the development of the Study, both internally and in meetings with Ammon's city staff, elected officials, and residents.

**Discussions of Metering and Conservation in the Study**

The table below lists the portions of the Study that discuss metering, conservation, and the adoption of a flow-based rate:

| Page No. | Section | Summary |
|---|---|---|
| 1 | Introduction | Creation of citizen water advisory committee to solicit public input on metering and other water system issues. |
| 29 | 2.2.7 | Describes the City of Ammon's intent to expand water metering to all customers. |
| 54-55 | 4.5 | Current customer metering status; benefits of metering. |
| 81 | 7.2.2 | Potential to optimize capacity of existing water supply facilities through conservation. Reference to this section is also made in the water rights and delivery sections of the Study as a means of stretching those resources as well. This section also describes observed conservation effects due to metering in other communities in this region. |
| 99-100 | 7.7.1 | Conservation and metering were among the final alternatives recommended by the Study (and subsequently adopted by the City of Ammon). |

The pages referenced above have been attached to this memo for convenience.

**Development of a Flow-Based Water Rate**

The City employed a rate development consultant, Econics, to assist in development of a flow-based rate as recommended by the Study. The model used in this process assumed a 20% reduction in water demand system-wide at the start of the new rate. This is consistent with the comments made in the Study (page 81) that, in our experience, other communities in our region have experienced conservation reductions as high as 20%-30% upon implementing a metered rate for the first time.

KELLER ASSOCIATES, INC.

Riley D. Bradshaw, P.E.
Project Engineer

# Introduction

## Purpose and Need for Project

The last system-wide water study for the City of Ammon was completed in 2006 as part of a Regional Water Planning study that included Falls Water and Ucon. Since that study, The City of Ammon has completed several major water projects and has seen significant growth. Major water projects since the 2006 study include the Well 8 tank and booster station, the Hill Tank and booster station, the Well 9 improvements, and various transmission line projects. The City of Ammon has completed several localized studies recently that looked at portions of the water system. These studies include the Well 6 Pump Station Evaluation completed in 2014 and the Communities Master Plan completed in 2016. These studies identified water system deficiencies and made recommendations for improvements, but did not look at the water system as a whole.

The City of Ammon commissioned this Water Facilities Planning Study to evaluate and make recommendations for the water system as a whole. The recommendations from this study will allow the City Council to prioritize, plan, and budget system improvements for the system as a whole rather than piecemeal. The recommendations from prior localized studies have been incorporated into this study.

## Plan of Study and Report Organization

Chapter 1 describes the City of Ammon's existing drinking water system consisting of wells, tanks, booster stations, and transmission and distribution piping. Chapter 2 describes the existing environmental conditions in the planning area. Chapter 3 outlines the planning criteria which form the basis of the water system evaluation and resulting recommendations. Chapter 4 forecasts water system demands by establishing current production and applying current per capita usage to growth projections. Chapter 5 describes the results of the computerized system analysis that was used to identify distribution system deficiencies. Chapter 6 contains a supply, storage, and delivery evaluation for the system as a whole and for each individual pressure zone. Chapter 7 includes the initial and final screening of alternatives to address deficiencies that were identified in Chapters 5 and 6. Chapter 8 lists prioritized improvements with costs in the Capital Improvements Plan. Chapter 9 is a discussion of funding and user rates.

## Project Implementation

The City recognizes that they must maintain their water system infrastructure in order to be able to continue providing reliable water service to current residents, and to be able to provide water service to new businesses and developments who want to locate in Ammon. Growing system demands, calls on water rights, and water system repairs have kept water system issues forefront for City elected officials.

In order to better inform the public and to gather support for needed improvements, the Mayor appointed a water committee comprised of residents from varying backgrounds. This committee met several times in 2017, and again in 2018 to discuss water conservation measures including water meters and implementing meter-based user rates. As this Water Facilities Planning has progressed, the Mayor invited us to come present early findings and alternatives to the water committee for their consideration. Discussions in these water committee meetings and subsequent City Council meetings have led to a plan to implement a meter-based user rate structure with an increase in user rates that will allow the City to pay for water system improvements as they are needed rather than borrow the money to pay for improvements.

The City has the technical, financial, and managerial resources to implement the recommendations of this study.

### 2.2.4 Fauna, Flora & Natural Communities

The Yellow-billed Cuckoo is the only endangered species that could be potentially harmed by activity in this area.[5] However, there is no critical habitat listed for this area.

### 2.2.5 Land Use & Development

Figure 2.5 shows an estimate of land uses across Ammon's Area of Impact. The majority of this area is either developed land or cultivated crops, with some areas of grasslands and scrub on the foothills.

Ammon continues to grow in size and population. Housing, industrial, and commercial development have all grown relatively in proportion with one another. Section 2.2.12 further discusses land use and development.

### 2.2.6 Cultural Resources

There are no buildings listed by the National Register of Historic Places.[6]

### 2.2.7 Utility Use

Culinary water is provided to the residents of Ammon exclusively by groundwater pumped from wells (either through the City or through Falls Water Company). The City of Ammon planning area is served by Rocky Mountain Power for all of its electrical needs. Minimizing electrical consumption is an important consideration when considering system upgrades or expansion. In cases where it is necessary to utilize electrical power for purposes such as pumping, it is important to consider efficient components and operational procedures. The City's operational strategy is intended to minimize unnecessary start and stop of pumps to avoid excess power use.

Much of the system's water connections are metered and the City plans to eventually meter all usage. The water meters are typically read year round on a monthly basis. See Chapter 4 for more information on the state of the City's metering efforts.

[5] U.S. Fish & Wildlife Service. Information for Planning and Consultation. Endangered Species. Retrieved March 23, 2017 from https://ecos.fws.gov/ipac/location/B567NFROCVGJXLUUYMCDN34G74/resources#endangered-species

[6] National Park Service. (2015, September). National Register of Historic Places. Retrieved April 12, 2017, from http://www.nps.gov/nr/research/

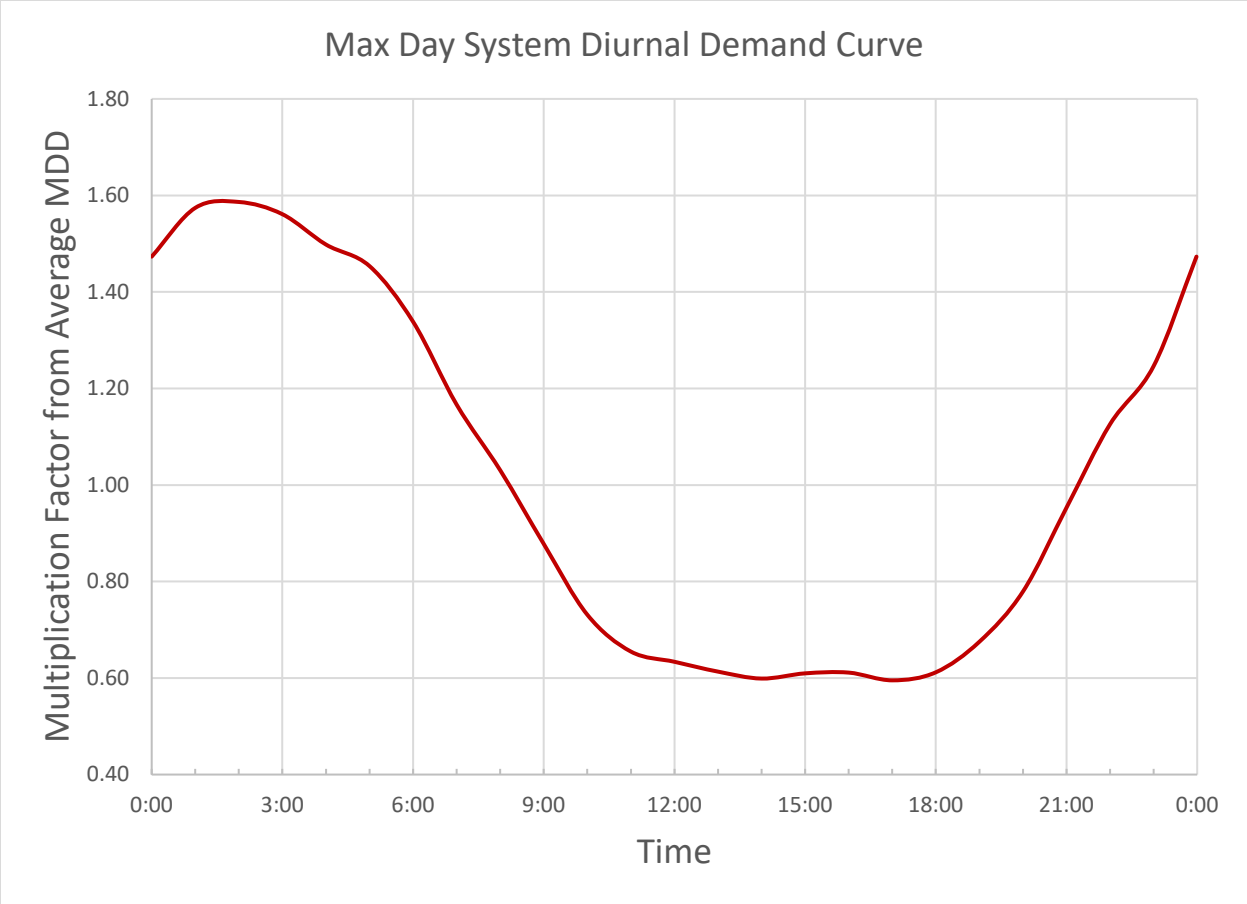



Figure 4.3: Summer Water Usage Pattern

A peak hour demand equivalent of approximately 1.59 times the corresponding daily average demand is anticipated around 2:00 a.m. during the summer months. The lowest system demands are about 0.6 times the corresponding average daily demand and occur from around noon until 5:00 p.m.

## 4.5 WATER METER DATA

The City of Ammon requires installation of meters on all new residential or commercial construction or when such properties are being renovated if no meter is present[3]. The water department has a stockpile of meter pits and meters. These are installed whenever a service line with no meter is repaired or replaced. In addition to these new installations, the water department is also working their way through existing meters to fix meters that were incorrectly installed, are hard to access, or that show signs of inaccuracy.

Table 4.7 shows the progress of meter installation as reported by the City in early 2017 when Keller Associates obtained current metering data. Residential and commercial meters are read year round on a monthly basis and most of the City's meters are the radio-read type. The City has the ability to tie metered usage to their customer billing program but does not currently report usage or charge base on consumption (see Chapter 9 for more detail regarding the City's rate structure). Keller

[3] City of Ammon. (2014). City Code Title 8 Chapter 3. Retrieved March 16, 2018 from http://public.cityofammon.us/weblink/.

Associates' experience with other communities in Idaho has been that the implementation of a flow-based rate structure leads to reductions in usage of as much as 20-30%.

Table 4.7: Ammon Metering Progress

| Water User Type | Estimated % Metered |
|---|---|
| Commercial/Institutional | 59% |
| City Landscaping | 100% |
| Residential (small lot) | 55% |
| Residential (large lot) | 66% |
| Apartments | 30% |
| Parks | 17% |
| **City Overall** | **60%** |

With a significant portion of users still to be metered, a reliable breakdown of consumption by water user type is not yet available. Such an analysis would be just one benefit of many to having all customers metered:

- Equitable assessment of monthly service fees based on usage; small users would no longer be subsidizing large users
- Track trends and changes in usage among different user types
- Homeowner awareness of consumption and effects of conservation
- Ability to bill based on actual usage; financial incentive to conserve
- Awareness of users who water in excess or who may have leaks
- Ability to gauge the effectiveness of conservation education efforts
- Target conservation education efforts to neighborhoods with excessive use
- Allow for water auditing procedures which help to identify non-revenue water

Non-revenue water, mentioned in the last bullet, is water produced by the system that is not delivered to paying customers. Some non-revenue water goes to authorized uses (e.g. hydrant flushing, park watering), while some does not (e.g. water theft, loss to system leaks, metering inaccuracies, etc.). Better metering data is key to identifying non-authorized, non-revenue water usage so that the City can maximize the amount of production costs that are recouped.

Metering also allows City staff to identify excessive water use. From the metering data provided by the City, Keller Associates was able to identify the twenty metered connections with the highest peak month usage for the summer of 2016. These values are presented in Table 4.8 and were later used in the hydraulic model developed in Chapter 5. Addresses have been removed to protect privacy; however, customer numbers are included for City use. More than half of the accounts shown below are residential, almost all of which are on larger, RP or RPA zoned lots. These lots used an average of 16,000-67,000 gallons per day in July of 2016.

# 7 IMPROVEMENT ALTERNATIVES

This chapter outlines the development and screening of specific supply, storage, delivery, and transmission improvement alternatives proposed to address the deficiencies identified in Chapters 5 and 6. In addition to construction of new facilities, this chapter evaluates whether optimization of existing infrastructure is an option and what the consequences of taking no action might be.

## 7.1 REGIONALIZATION

Ammon's water system is surrounded by four adjacent water systems: Idaho Falls to the west, Falls Water Company to the north, Comore Loma Water Corporation, and Blackhawk Water to the southeast. Comore Loma and Blackhawk are located in close enough proximity that a regionalization effort would be attractive, though this may be an option later on if the two systems expand to touch each other. Falls Water provides service to certain areas of Ammon that were previously unannexed (see Figure 1.1). At this point, no serious discussion of a possible regionalization effort between Idaho Falls, Falls Water, and/or Ammon has taken place. With no need for a centralized treatment facility in any of these systems, storage and supply assets are localized and there would likely be little "economy of scale" type of benefit to regionalizing. This alternative will not be considered further.

## 7.2 SUPPLY ALTERNATIVES

These alternatives address the deficit between firm capacity and maximum day demand.

### 7.2.1 No Action

The City's supply firm capacity is currently at a slight deficit as compared to maximum day demand. Without additional sources of supply or a reduction in demand, the system will be out of compliance with state regulations. In this scenario the City would not be able to issue a "Will Serve" determination to new development seeking access to the municipal water system, essentially stopping further growth.

### 7.2.2 Optimization of Existing Facilities

There are multiple options available to maximize the impact of Ammon's existing supply infrastructure:

**Water Metering:** Ammon's current metering status was discussed in Chapter 1. The City is currently pursuing the implementation of a flow-based user rate and anticipates that a reduction in demand will follow. Knowing that the volume consumed directly impacts one's bill tends to incentivize conservation. Keller Associates has seen such results in multiple communities throughout the region that have taken a similar course of action (as much as 20-30% in some cases). As the actual long-term reduction in demand resulting from a flow-based rate is uncertain, its effects have not been included in the evaluation made by this study.

If significant usage reduction is achieved, this could serve as a short term supply deficit solution; however, reductions are not likely to be sufficient over the entire 20-year planning horizon. If the City adopts a flow-based rate, change in usage should be tracked over several years (once customer usage patterns have stabilized) to determine the long-term impacts to per capita demand. The future demands presented in this study could then be decreased accordingly, if appropriate, effectively prolonging the sufficiency of any new supply constructed to meet current deficiencies.

### 7.7.1 Results of Initial Screenings

Table 7.8 provides a summary of the viable alternatives discussed in the respective initial screening in previous sections of this chapter.

Table 7.8: Summary of Initial Screening

| Supply | Storage | Delivery | Distribution | Water Rights |
|---|---|---|---|---|
| Metering and Conservation Education | Operational Storage Adjustments | Metering and Conservation Education | Optimize Transmission to The Cottages and Quail Ridge | Metering and Conservation Education |
| Well 6 Rehab | Well 6 Tank Rehab | Optimize Pump Set Points | Aging Line Replacement | Purchase Additional Water Rights |
| Woodland Hills Well | Second tank at Well 6 | Well 6 Booster Rehab | Looping Lines (various locations) | Water Banking and Mitigation |
| | Woodland Hills Tank | Woodland Hills Booster Station | | |
| | | Zone 2 Split (both options) | | |

As storage capacity is the most critical existing need, it is unlikely that the City will want to pursue a well project that does not also include a tank. The Well 6 rehabilitation projects (tank, well, and boosters) would all need to be completed together to be advantageous. The Woodland Hills projects are likewise essentially a single project for this reason. In comparing these two alternatives it became clear that although there are cost efficiencies to rehabilitating the existing infrastructure at Well 6, this alternative is not capable of providing enough storage to correct the existing deficit of 1.6 MG (1.0 MG available if second tank at Well 6 were constructed). If the Well 6 improvements were constructed, a second well and tank project would also need to take place to make up the difference. Additionally, the Well 6 complex does little to correct the system supply and pressure issues that are experienced by the more isolated areas on the south end of Ammon.

In discussions with the City this led to the conclusion that while improvements at Well 6 should still be pursued at some point in the future, the Woodland Hills alternative (which could be sized to cover the entire storage deficit) would be the City's preferred well, tank, and booster alternative for correcting current system deficiencies.

There are several good options for optimizing existing infrastructure. There is also a category of alternatives that are purely operational or that have relatively small capital costs. As there is minimal cost to pursuing these, we recommend that these alternatives be pursued and that only new construction alternatives (including rehabilitation of existing infrastructure) be considered in

the final cost and environmental screening process. This simplified approach is shown in Table 7.9.

Table 7.9: Alternatives Moving to Final Screening

| Low Cost/Operational | New Construction/Purchase |
|---|---|
| Metering and Conservation Education | Woodland Hills Complex |
| Operational Storage Adjustments | Well 6 Complex Rehabilitation and Expansion[2] |
| Optimize Pump Set Points | Purchase Additional Water Rights |
| Optimize Transmission to The Cottages and Quail Ridge | [3]Zone 2 Split: Pumps at Pump Station 9 |
| Water Banking and Mitigation[1] | [3]Zone 2 Split: Inline Pumps on 21st St |
| | Aging Line Replacement |
| | Looping Lines |

[1] The Water Banking and Mitigation alternative is currently shown in the "low cost" category as the City is still in the investigational phase and exploring what options are available at this point.
[2] The Well 6 Complex was eliminated as a final alternative, but will be included in the Capital Improvement Plan and constructed at a later date.
3 A selection between the two "Zone 2 Split" options will be made in following sections.

As Table 7.9 indicates, only the Zone 2 Split options result in competing alternatives that require further evaluation through cost comparison and environmental impact. The environmental analysis will be completed for all new construction projects to identify any critical concerns.

### 7.7.2 Capital Costs

Table 7.10 provides a comparison of the capital costs associated with the two Zone 2 Split alternatives. As both alternatives would require approximately the same net pumping horsepower to achieve the target upper zone pressures, it is expected that the difference in electrical pumping costs will be minimal. The effective lifespan of respective pump and control components is also believed to be comparable. Because of the resulting similar nature of O&M costs between these two alternatives, it was decided that a present worth analysis (taking cost over time into account) was not warranted and that a comparison of capital costs would be sufficient.

Exhibit 2: 2018 Pump Data in Gallons

| 2018 | Zone 1 PS 2 / Well 2 | Zone 1 PS 3 / Well 3 | Zone 1 PS 5 / Well 5 | Zone 1 OFF PS 6 / Well 6 | Zone 1 PS 7 / Well 7 | Zone 1 PS 8 / Well 8 | Zone 1 and 2 PS 9 / Well 9 | Zone 1 PS 10 / Well 10 | Zone 1 - 2 - 3 PS 11 / Well 11 | **Monthly Total** |
|---|---|---|---|---|---|---|---|---|---|---|
| ***January*** | 120 | - | - | - | - | 43,861,656 | 81 | - | - | 43,861,857 |
| February | 290 | - | 413 | - | - | 39,687,635 | - | - | - | 39,688,338 |
| March | - | - | - | - | - | 46,627,114 | 3,825,879 | - | - | 50,452,993 |
| April | 105 | - | - | - | - | 44,583,994 | 29,946,868 | - | 5,084,294 | 79,615,261 |
| May | - | 118 | - | - | 12,497 | 80,386,410 | 26,110,474 | 12,497 | 71,137,995 | 177,659,991 |
| June | - | 1,244,177 | 6,619 | - | 38,716,553 | 78,157,137 | 15,349,240 | 57,025,628 | 95,290,472 | 285,789,826 |
| July | 2,525,327 | 304 | 49,165,546 | - | 59,116,716 | 102,899,005 | 24,195,626 | 34,923,386 | 130,830,722 | 403,656,632 |
| August | 14,389,001 | - | 46,145,829 | - | 53,818,837 | 87,561,438 | 9,460,621 | 40,826,322 | 163,349,322 | 415,551,370 |
| September | 14,288,028 | - | 41,744,082 | - | 35,173,069 | 84,343,320 | 11,047,220 | 27,825,978 | 135,111,120 | 349,532,817 |
| October | 1,898,924 | - | 8,034,951 | - | 11,576,772 | 40,748,557 | 29,712,098 | 2,475,109 | 39,283,542 | 133,729,953 |
| November | - | - | - | - | - | 35,548,441 | 22,453,318 | 850 | 124 | 58,002,733 |
| December | - | - | 191 | - | 448 | 40,165,322 | 16,831,754 | - | 2,551 | 57,000,266 |
| TOTALS: | 33,101,795 | 1,244,599 | 145,097,631 | - | 198,414,892 | 724,570,029 | 188,933,179 | 163,089,770 | 640,090,142 | 2,094,542,037 |

Exhibit 3: Water Savings Calculations

**Water Savings from Metering 916 Customers (20.1% of total customers)**

| Year | Acre Feet | Water Savings |
|---|---|---|
| 0 | 1291.827 | |
| 1 | 1033.4616 | 258.3654 |
| 2 | 1028.294292 | 5.167308 |
| 3 | 1023.152821 | 5.14147146 |
| 4 | 1018.037056 | 5.115764103 |
| 5 | 1012.946871 | 5.090185282 |
| 6 | 1007.882137 | 5.064734356 |
| 7 | 1002.842726 | 5.039410684 |
| 8 | 997.8285125 | 5.014213631 |
| 9 | 992.8393699 | 4.989142562 |
| 10 | 987.8751731 | 4.96419685 |
| 11 | 982.9357972 | 4.939375865 |
| 12 | 978.0211182 | 4.914678986 |
| 13 | 973.1310126 | 4.890105591 |
| 14 | 968.2653576 | 4.865655063 |
| 15 | 963.4240308 | 4.841326788 |
| 16 | 958.6069106 | 4.817120154 |
| 17 | 953.8138761 | 4.793034553 |
| 18 | 949.0448067 | 4.76906938 |
| 19 | 944.2995827 | 4.745224033 |
| 20 | 939.5780847 | 4.721497913 |
| **Total Water Savings** | | **352.2489153** |

Apr 26, 2019

# Simple Conservation Measures That Make a Difference

*The City of Ammon is leading the charge on water conservation in eastern Idaho through a simple, effective approach — water metering.*

Water is the lifeblood of Idaho. This is no more apparent than across the arid Snake River Plain, much of which receives less than 10 inches of precipitation annually. The Eastern Snake Plain Aquifer is the sole source of drinking water (https://www.idahoconservation.org/issues/water/protecting-your-drinking-water/) for over 300,000 Idahoans. It is **one of Idaho's most precious resources** so everyone wants a piece of the pie – municipalities, agricultural producers, industry, and so on. The state of Idaho has put considerable resources into recharging the aquifer to bolster declining groundwater levels (https://www.idahoconservation.org/blog/all-idahoans-must-continue-to-benefit-from-clean-drinking-water-healthy-rivers/). **However, the easiest, simplest, and most effective solution remains to use less water.** For municipalities, the low-hanging fruit in this regard is water metering.

## What is Water Metering?

Water metering is simply the process of measuring water use. In a public water system, water metering measures the volume of water used by residential and commercial customers. Coupled with a pricing structure based on volume, a metered water system provides customers with the incentive to conserve water. A similar type of system is used by electrical utilities to calculate your bill based on the cost of energy and the number of kilowatt hours used.

**In a non-metered water system, you could use 10 gallons of water per month while your thirsty neighbor uses 100 gallons, but you both pay the same flat rate.** Such a system is not equitable; those who already conserve water subsidize those who don't so there is no financial incentive for people to conserve water. On the flip-side, in a metered water system, your water bill depends on how much you use so your neighbor would have a clear financial incentive to cut back on their water use.

According to recent studies on metered water systems, **customers will use 20-30% less water when paying a metered water rate** as opposed to a flat rate.

## Ammon's Water Conservation Efforts

Ammon, a small city of about 15,000 people in eastern Idaho, provides a great example of how municipalities can make a real difference by switching to a metered water system. On March 7, 2019, the Ammon City Council approved metered water rates for residential customers (https://www.postregister.com/news/government/ammon-council-votes-to-implement-new-water-fees-beginning-april/article_2efee343-1ae5-5f7f-9e93-a5a5940d1037.html) for the first time. This is a big step because even small cities need a LOT of water. In 2018, Ammon pumped just over two billion gallons of water from the Eastern Snake Plain Aquifer. Assuming a 20-30% reduction in water use based on recent studies, **Ammon expects to save in the neighborhood of 400 million to 650 million gallons of water per year – equivalent to nearly 1000 Olympic-sized swimming pools!** Over a 20-year period, the city is expecting to save upwards of 500 *billion* gallons of water.

## Time for Other Cities to Follow the Lead

Ammon illustrates how even small municipalities can make a big difference when it comes to water conservation. Just next door to Ammon, Idaho Falls (pop. 61,000) is one of the largest unmetered cities in Idaho. With four times the population of Ammon, Idaho Falls could achieve a correspondingly bigger total water savings through the relatively simple water metering approach. Installing a metered watered system in a larger city is expensive, but given the scarcity of water resources in the region, it is a worthwhile investment in our future. **The aquifer is a priceless resource for eastern Idaho**, and taking simple measures to retain billions of gallons of water in the aquifer is something that every unmetered municipality should be seriously considering.

Josh Johnson

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