



Wright Water Engineers, Inc.

1666 N. Main Avenue, Suite C
Durango, Colorado 81301
(970) 259-7411 TEL
(970) 259-8758 FAX

www.wrightwater.com
e-mail: pfooster@wrightwater.com

August 22, 2019

Kevin Reidy
State Water Conservation Technical Specialist
Colorado Water Conservation Board
1313 Sherman St., Room 721
Denver, CO 80203

Re: Town of Olathe Water Efficiency Plan

Dear Mr. Reidy,

Wright Water Engineers, Inc., (WWE), on behalf of the Town of Olathe (Town) is proud to present the *Town of Olathe Water Efficiency Plan* (WEP) for your review and approval. WWE developed the plan based on historical water demand data, water supply and distribution system information, and input provided by the Town to best suit the Town's future water supply needs.

The Town completed a 60-day public comment period that lasted from June 8, 2019 through August 6, 2019. The Town and WWE also presented the draft WEP during a Town Hall meeting on June 10, 2019. A copy of the public comment received, and the resolution are included in Appendix B of the WEP.

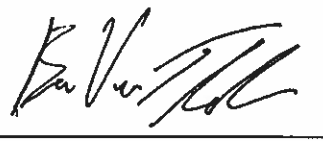
Sincerely,

WRIGHT WATER ENGINEERS, INC.

By

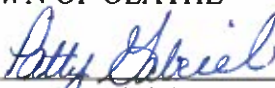

Peter R. Foster, P.E.
Vice-President

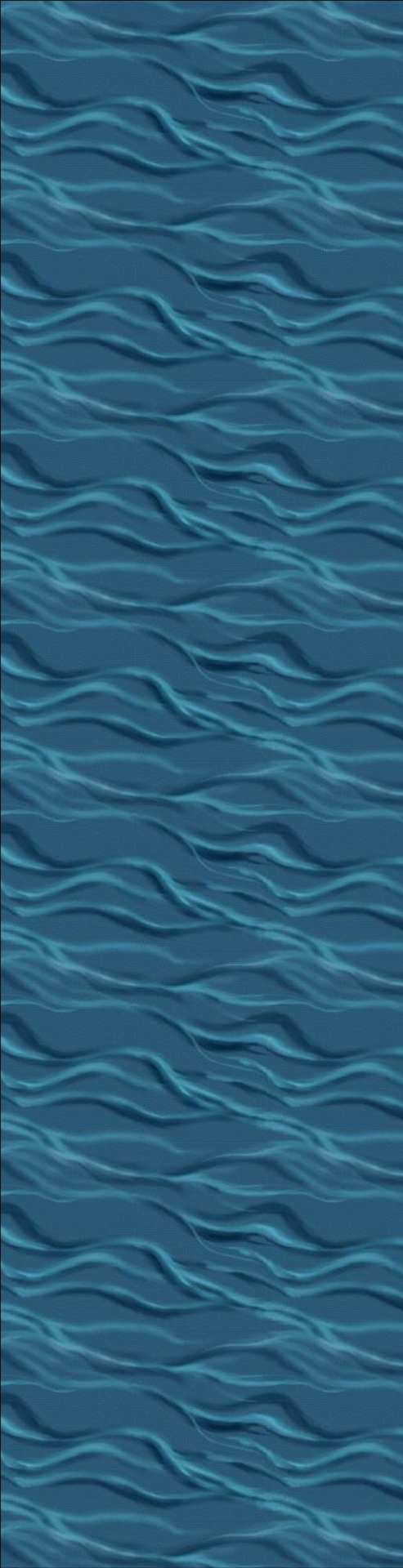
By


Benjamin Von Thaden
Hydrologist

TOWN OF OLATHE

By


Patty Gabriel
Town of Olathe Administrator



Town of Olathe Water Efficiency Plan

Prepared for:

Town of Olathe
P.O. Box 789
Olathe, CO 81425



Wright Water Engineers, Inc.

August 2019

141-059.010

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EXECUTIVE SUMMARY

The Town of Olathe's (Town) water demands are edging close to the allocation amount provided from its main water supply, the Project 7 Water Authority (Project 7). If the Town's current water use and growth patterns continue, water demands could exceed the Town's Project 7 allocation as early as 2022. If the town begins implementing water saving measures, the projected exceedance could be pushed further into the future. It is estimated that if the Town were able to reduce water demands by 20 percent, the projected exceedance could be pushed further out to 2035. These demand projections and water savings are further explained in Sections 3.2.2 and 3.2.3.

The Town has completed and adopted this Water Efficiency Plan (WEP) in order to evaluate, prioritize and implement water efficiency activities. The goals of these activities are to provide data to the Town on system operations and water allocation, to reduce system losses, to examine potential additional water sources, evaluate potential timing of bringing the Town's Dry Fork Water Rights online for municipal use, to develop estimates of the avoided costs as a result of increased efficiencies, and to increase public awareness and support for the efficiency activities. The WEP focuses on efficiency activities that are proposed to be implemented by the Town for the main water supply infrastructure. The Town will also consider implementation of education and outreach measures. The Town plans to lead by example and implement water saving measures such as metering all taps, alternative irrigation sources and efficiencies, as feasible.

The implementation of the WEP will help the Town to improve water demand forecasts, plan for infrastructure needs and the use of the Dry Fork Water Rights, manage its water demands to stay within its physically and legally available water supply, and to explore the potential of obtaining additional supply from Project 7.

1.0 INTRODUCTION AND APPROACH

The Town is located within the northeastern portion of Montrose County approximately 16 river miles upstream of the confluence of the Uncompahgre River and the Gunnison River, and is situated on both sides of the Uncompahgre River (see Figure 1). The Town was incorporated in 1907 and has a current population of approximately 1,850 people.

In 2016 Wright Water Engineers (WWE) completed the *Town of Olathe Water Rights Assessment* (2016 WWE Report) that evaluated options for the Town to protect and enhance its Dry Fork Water Rights, including the evaluation of conceptual cost estimates for several proposed alternative uses. This Report relied upon the 2016 WWE Report, the *2010 Statewide Water Supply Initiative (SWSI) Report*, the *2010 SWSI Gunnison Basin Needs Assessment*, the *2012 Municipal Water Efficiency Plan Guidance Document* (MWEPG), *Guidebook of Best Practices for Municipal Water Conservation in Colorado* (BMP Guidebook), the EPA's *Water Audits and Water Loss Control for Public Water Systems* document (WLC), and data and information provided by Town Officials.

In developing this WEP, WWE and the Town used the following approach outlined in the MWEPG:

- Profile existing water supply system
- Profile water demands and historical demand management
- Develop integrated planning and water efficiency benefits and goals
- Select water efficiency activities
- Develop implementation and monitoring plan
- Public review and formal approval

See Table 1 for a summary of the team members who contributed towards this WEP and their role.

2.0 PROFILE OF EXISTING WATER SUPPLY SYSTEM

2.1 Overview of Existing Water Supply System

2.1.1 Service Area and Municipal Water Connections

The Town's distribution system provides treated water to a service area of approximately 710 acres, primarily within the city limits as well as several parcels outside of city limits (see Figure 1). As of October 2018, there are 548 individual water service taps, 71 commercial water service taps, and 16 municipal water service taps, for a total of 635 taps.

2.1.2 Water Supply Sources

Since 1980 Project 7 has been the Town's primary municipal water source. Project 7 is a cooperative effort between the City of Montrose, City of Delta, Town of Olathe, Tri-County Water Conservancy District (TCWCD), Menoken Water District, Chipeta Water District, and the

Uncompahgre Valley Water Users Association (UVWUA). The source for Project 7 is the Gunnison Tunnel, via an exchange with Ridgway Reservoir. The Town's current allocation of Project 7 water (Project 7 allocation) is 300 AF, or approximately 2.9 percent of the total Project 7 allocation. The Town has a separate 1.29 AF allocation from the winter stock water program from Project 7.

The Town also owns 45.2 shares in the UVWUA that totals approximately 179.3 AF, which are divided between Community Park and Campo Verde HOA (see Table 3). The Olathe Sweet Corn Festival has historically taken place at Community Park. Community Park has 14 shares of the original water right number 2222. Campo Verde HOA, located near the Wastewater Treatment Plant (WWTP) on the north end of Town, has 31.20 shares of the original water right number 1529.

. The Town also owns several water rights in the East Fork Dry Creek and the West Fork Dry Creek (Dry Fork Water Rights) (see Table 4). The East Fork Dry Creek and West Fork Dry Creek basins are located approximately 20 miles southwest of Olathe. Water from the Dry Fork Water Rights was historically conveyed to the Town via the Moffit Springs Pipeline, Town of Olathe Pipeline, and East Fork Feeder Pipeline, which form a 20.8-mile gravity-fed pipe network that historically conveyed water from the East Fork Dry Creek and West Fork Dry Creek to Olathe (see Figure 3).

2.1.3 Water Distribution System

The Town has a one million-gallon storage tank located on the south end of Town and stores Olathe's Project 7 water as it is delivered to the Town (see Figure 1). Prior to delivery to the storage tank, a master meter operated by Tri-County Water measures Project 7 water delivered to the Town. Through conversations with Tri-County water, WWE learned that this master meter cannot be calibrated. Both Tri-County Water and WWE agree that this master meter should be replaced in the near future. After the storage tank water is then distributed through a network of 12-inch, 10-inch, 8-inch, 6-inch, and 4-inch pipes throughout the Town's distribution system. During the kickoff meeting for this WEP Town Officials noted they do not know what the actual municipal system water losses are, but they estimate the losses range from 10 to 15 percent.

In 1983 the Town installed new water mainlines made of polyvinyl chloride (PVC). The water distribution system still contains limited asbestos cement (AC) and ductile iron piping. Since installation of the new water mainlines there have been no significant repairs on the mainlines and no leak detection surveys.

2.1.4 Irrigation within City Limits

The Town currently uses its UVWUA shares to irrigate the Community Park and Campo Verde HOA parcels with non-potable water. The Town also uses non-potable water to irrigate Entrance Park and the Cemetery (see Figure 2). The Olathe School District utilizes non-potable water to irrigate some fields at Olathe Middle School and High School. The total area of lands irrigated with non-potable water within city limits is approximately 50 acres.

The Town currently uses potable municipal water to irrigate Town Park, Onion Park, Legion Park, Sugar Beet Park, Pocket Park, a portion of Community Park, and Lion's Park (see Figure 2). Olathe Middle School and High School use potable municipal water to irrigate the baseball diamond infield, and the Elementary School uses potable municipal water to irrigate their fields. The total area of land within city limits that is irrigated with potable municipal water is approximately 8.3 acres (see Figure 2).

2.1.5 Water Supply Limitations

Limitations for the Town's water supply include the Town's Dry Fork Water Rights, the Town's 300 AF Project 7 allocation, and UVWUA shares which are permanently tied to the parcel they were assigned.

Since switching to Project 7 for its municipal water source, the Town does not treat and use the Dry Fork Water Rights for the potable municipal water supply. The Town could bring this source back online as a municipal source. However, treatment would be needed if used for potable water.

The Town's water demand is nearing its Project 7 allocation. In 2016, the Town's Project 7 deliveries equaled 271.5 AF, or 91 percent of their Project 7 allocation (see Table 2). Depending on population growth and water savings, WWE estimates the Town could exceed their Project 7 allocation as soon as year 2022 (see Section 3.2.2).

On February 4th, 2019 WWE had a phone conversation with Cheryl DeJulio of the UVWUA. Ms. DeJulio informed WWE that all UVWUA shares are tied to the land and the UVWUA shares cannot be transferred from parcel to parcel. Ms. DeJulio also noted that if the Town annexes parcels in the future that have UVWUA shares, the Town can choose to retain the UVWUA shares and may be able to rotate the UVWUA water for delivery on the same lateral. This condition limits the mobility of the UVWUA shares since they are tied to the land and are not a conducive municipal water supply source.

2.2 Water Supply Reliability

Since switching to Project 7 for its potable municipal water supply, the Town has found Project 7 to be very reliable both in terms of water quantity and quality. The Town's Dry Fork Water Rights are less reliable than Project 7 water both in terms of legal and physical supply as the Dry Fork Water Rights are not as senior as the Project 7 and UVWUA Water Rights, and because of the smaller quantity of the Dry Fork Water Rights.

3.0 WATER USE AND DEMANDS

3.1 Municipal User Categories and Historical Demands

To examine the Town's historical water demands, WWE obtained the Town's Project 7 retail water deliveries for the period of 1982 through September 2018. The Town's historical water demand since 1982 has ranged from a low of 166 AF in 1986, to a high of 282.6 AF in 2010 (see Table 2). Between 1983 and 2017 the Town purchased an average of 231.8 AF per year of Project 7 retail water (see Table 2). Figure 5 indicates the Town's historical water demand averages 132 gallons per-capita per day (gpcd) between 2000 and 2017. This average water demand is used as the basis for the Town's water demand forecast calculation, further explained in Section 3.2.

The Town meters individual water service taps for all water user categories to monitor and bill for potable municipal water use. The municipal water user categories set up by the Town include Residential, Board of Trustees, Business, Churches, Schools and Government, Stock Water, Commercial, and Industrial.

The Town also provided WWE with partial municipal water billing records for the top water users for 2016, 2017, and 2018. The 2017 billing records were used to rank the municipal water user

categories because 2017 had the most complete billing records data. The 2017 top municipal water user categories ranked from highest use (1) to lowest use (7) are as follows:

1. Residential
2. Churches, Schools and Government
3. Industrial
4. Businesses
5. Board of Trustees
6. Commercial
7. Stock Water

The top 2017 billed municipal water volumes per user category are shown in Table 6. WWE and the Town kept the top municipal water user categories in mind during the selection of water efficiency goals and water efficiency measures (see Sections 4.2 and 4.3).

3.2 Population Projection and Water Demand Forecast

This WEP uses a 50-year planning horizon for population projections to forecast water demands for the Town. To calculate the 50-year population projection and water demands forecast, WWE followed MWEFG guidance and used the following exponential equation:

$$P = P_0 e^{rt}$$

P = population (or water demand)
 P₀ = initial population (or initial water demand)
 e = exponential
 r = growth rate
 t = time (years).

3.2.1 Population Statistics and 50-Year Population Projection

Based on population data from the Colorado Department of Local Affairs (DOLA), the Town's 2014 population was 1,790 people. A summary of the Town's population from 1990 through 2018 is provided in Table 5. As of May 2018, the Town's estimated population is 1,850. The average annual population growth rate (growth rate) from 2000 to 2018 is 1.6 percent (see Table 5). DOLA's population forecast for Montrose county from 2020-2050 predicts an average growth rate of 1.9 percent. The average 1.9 percent is used to calculate standard population projection and the water demand forecast for the next 50 years. The low range population projection sits 0.5 percent

below DOLA's standard growth rate at 1.4 percent. The high range population projection sits 0.5 percent above DOLA's standard growth rate at 2.4 percent.

The Town's 50-year population projection ranges from 3,696 people for the low range, to 6,155 people for the high range in 2068 (see Figure 4).

3.2.2 Water Demand Projections and Timing of Exceeding Project 7 Allocation

The average per-capita water demand from 2000 through 2017 equals 132 gcpd (see Table 7 and Figure 6). As mentioned in Section 3.2.1, the standard growth rate (1.9 percent) for water demand projection is based on DOLA's future forecasts of population. The water demand projections were found by multiplying the population projections by the average per-capita water demand.

The low range water demand projection for 2068 equals 548 AF. The standard water demand projection for 2068 equals 707 AF, and the high range water demand projection for 2068 equals 913 AF (see Figure 6).

These water demand projections also provide an estimate of when the Town may exceed their current Project 7 allocation, and when they may need to increase their water supply. For the low range water demand projection, water demands exceed the Project 7 allocation by 2025. For the standard water demand projection water demands exceed the Project 7 allocation by the year 2023. And for the high range water demand projection, water demands exceed the Project 7 allocation by the year 2022 (see Figure 6).

3.2.3 Water Demand Projections and Timing of Exceeding Project 7 Allocation under Various Water Savings Scenarios

To examine the Town's projected water demands under various water saving conditions, WWE applied 10, 20, and 30 percent water savings to the low, standard and high range water demand projections. Figure 7 shows 10, 20, and 30 percent savings applied to the **low range** water demand projection, which results water demands of 493 AF per year, 438 AF per year, and 384 AF per year, respectively by the year 2068. Figure 8 shows 10, 20, and 30 percent savings applied to the **standard** water demand projection, which results in water demands of 637 AF per year, 566 AF per year, and 495 AF per year, respectively by the year 2068. Figure 9 shows 10, 20, and 30 percent

savings applied to the **high range** water demand projection, which results in water demands of 821 AF per year, 730 AF per year, and 639 AF per year, respectively by the year 2068.

These projected water demands with various saving conditions applied again provide an estimate for when the Town may exceed their current Project 7 allocation, and when they may need to acquire additional water supplies. For the **low range** water demand projection with 10, 20, and 30 percent water savings the Town is projected to exceed its Project 7 allocation by year 2033, 2041, and 2051, respectively (see Figure 7). For the **standard** water demand projection with 10, 20, and 30 percent water savings the Town is projected to exceed its Project 7 allocation by year 2029, 2035, and 2042, respectively (see Figure 8). For the **high range** water demand projection with 10, 20, and 30 percent water savings the Town is projected to exceed its Project 7 allocation by year 2026, 2031, and 2037, respectively (see Figure 9).

4.0 WATER EFFICIENCY MEASURES, GOALS AND ACTIVITIES

4.1 Existing Water Efficiency Measures

The Town currently has several existing water efficiency measures in place including metering of all service taps, billing based on municipal water use, and conformance with state plumbing code.

The meters currently in use throughout the distribution system are relatively old and are manual-read meters which require significant man-hours to read all meters and enter data into databases for billing, which leaves room for human error in data entry.

The step rate structure currently in place charges residents and businesses for water use on a volumetric basis, with the rate becoming cheaper with the more water that is consumed: The monthly minimum rate for potable water equals \$18.20 up to 3,000 gallons. The rate for water in excess of 3,000 gallons per month (3,001 gallons up to 10,000 gallons) is \$3.07 per 1,000 gallons. The rate for water in excess of 10,000 gallons per month (10,001 gallons to 20,000 gallons) is \$2.41 per 1,000 gallons. And finally, the rate for water in excess of 20,000 gallons per month is \$1.69 per 1,000 gallons.

WWE also reviewed the Town's current Land Use Regulations and it appears there are currently no water efficiency measures in the Land Use Regulations. It is recommended that the Town

incorporate water efficiency measures such as adoption of water waste and landscape ordinances into these regulations in the future.

4.2 Selection of Water Efficiency Goals

WWE and Town Officials met on November 2nd and selected the following water efficiency goals:

1. Reduce delivery losses of purchased Project 7 water and reduce future water demand by 7 to 10 percent.
2. Work to improve accuracy of water measurements of billed municipal water and purchased Project 7 water.
3. Preserve the Town's Dry Fork Water Rights.
4. Reduce unbilled water use.
5. Provide information on how increased water efficiency affects the development schedule, both in timing and amount, of increasing the Town's future water supply.

4.3 Selection of Water Efficiency Activities

The selection process for the water efficiency activities consisted of general discussions and data and information sharing between the Town and WWE specific to the Town's historical water use and top user categories, future water demands, and potential new water supply sources. WWE then presented the Town with a list of potential water efficiency activities. Town Officials then discussed the list internally and during a November 2nd, 2018 meeting the Town selected the following water efficiency activities:

1. Update the municipal water billing structure to promote water efficiency.
2. Perform a leak detection survey on the Town's distribution system.
3. Replace aging water meters with modern automated water meters.
4. Public outreach for participation in ongoing water efficiency activities, and education on the amount of water, timing, and potential cost for developing new water supplies.

4.4 Estimated Water Savings of Water Efficiency Activities

From the BMP Guidebook there are estimated water savings for certain water efficiency activities, including the water efficiency activities selected by the Town.

4.4.1 Billing Structure Update

According to the BMP Guidebook, updating the municipal water billing structure to promote water efficiency could have varied water savings depending upon the type of billing structure that is implemented. Depending on the updated billing structure and updated rates per use step, the savings could range anywhere from 0 to 30 percent.

4.4.2 Leak Detection Survey

The BMP Guidebook also notes that savings tied to water loss management vary and depend upon the amount of forgoing loss and the changes made to control those losses. According to the EPA's WLC document, "Average water loss in systems is 16 percent [and] up to 75 percent of that is recoverable." Performing a leak detection survey could help pinpoint where some of the losses are occurring and provide valuable input on how to move forward to reduce such losses. Performing a water audit on the Town's distribution system, such as the AWWA M36 Water Audit, will help the Town to identify where water losses are occurring and provide the Town the ability to target interventions to effectively and efficiently reduce the identified system water losses.

The Town of Olathe Capital Improvements Plan- 2017 (CIP) notes that unaccounted for water, defined as water that is not registered on meters due to inaccurate meters, unmetered water usage, fire hydrant usage, flushing water lines and line losses, equaled 15.6 percent in 2015 and 16.1 percent in 2016. In 2018, the Town estimated their system water losses equaled 10 to 15 percent. Based on the Town's estimated 10 to 15 percent system loss in 2018, and up to 75 percent of losses being recoverable, a leak detection survey and follow up repairs could result in water savings from 7 to 11 percent for the Town.

4.4.3 Replacement of Aging Water Meters

Replacing aging water meters could also help locate leaks, provide more accurate demand data for municipal water customers, and improve efficiency and reduce human error when entering meter data. Accurate demand data can also provide Town staff more up-to-date and accurate water use data for more meaningful education and outreach efforts, as well as in targeting specific audiences to more effectively facilitate ongoing water efficiency activities.

4.4.4 Public Outreach and Education

The BMP Guidebook notes that public outreach and education efforts do not typically result in direct water savings but help to create a culture of wise water stewardship to promote water conservation and efficiency. Further, the Guidebook notes that public outreach and education should aim to, "...effectively communicate the value of water, and deliver consistent and persistent messages."

4.4.5 Future Water Demand Reductions

It is the Town's goal to reduce future water demand by 7 to 10 percent and based on the BMP Guidebook's estimated water saving of the Town's selected water efficiency activities, this future water demand reduction goal is likely feasible. Applying a 7 to 10 percent reduction range to the Town's standard range 50-year water demand forecast of 705 AF per year, results in water savings that range from 49.4 AF per year to 70.5 AF per year. After the selected water efficiency activities are implemented, WWE estimates it will take up to 10 years for reductions in Town's water demand to reach the 7 to 10 percent range.

5.0 FUTURE WATER SUPPLY

Through discussions with Tri-County Water WWE learned that the process to increase the Town's Project 7 allotment may be complicated and time-consuming. However, it is recommended that the Town begin conversations with all Project 7 participants to increase the Town's Project 7 allotment sooner than later.

In speaking with Ms. DeJulio, the UVWUA shares are not a very practical option for increasing the Town's water supply as the UVWUA shares are tied to the land and may not be swapped between parcels.

Another viable option for increasing the Town's water supply is to use its Dry Fork Water Rights. Delivery of this water could occur as soon as 2022 if Project 7 supplies are not increasing and water savings are not realized. Therefore, the Dry Fork Water Rights are an important component of the Town's future water supply. WWE recommends enrolling these water rights into an Instream Flow Program with the CWCB until they are needed for future municipal use.

6.0 IMPLEMENTATION AND MONITORING PLAN

6.1 Implementation Plan

6.1.1 Order and Timing for Plan Implementation

The anticipated order for implementation of the selected water efficiency activities is, 1) public outreach and education, 2) update the municipal water billing structure, 3) perform leak detection survey, 4) install new water meters. For planning purposes only, the anticipated timing for selected water efficiency activities to begin are shown in Table 8. Anticipated start times may change depending on funding availability and costs.

6.1.2 Additional Actions for Plan Implementation

Once this WEP is reviewed and approved by the CWCB there are several action items necessary to implement the water efficiency activities. These action items include receiving Town Board of Trustees approval for updating the municipal water billing structure, complete the CWCB's free online training for water audits, securing funding for the leak detection survey, securing funding for purchasing and installation of new water meters, training staff to administer the WEP and monitor water savings, and training staff to perform public outreach and education for the water efficiency activities and efforts listed herein.

6.1.3 Entities or Staff Responsible for Implementing the Water Efficiency

Activities

- Update Municipal Water Billing Structure: Coordination among Town Administrator, Town Board of Trustees, Public Works Director, and Building Official (Scott Eklund who is currently in charge of municipal water billing).
- Leak Detection Survey: Coordination among Public Works Director, Town Administrator, and contractor hired to perform the leak detection survey.
- New Water Meter Installation: Coordination among the Town, the CWCB, Colorado Division of Water Resources (CDWR), DOLA, and any other local or state agencies that may provide funding for new meter installation. Once funding is secured, coordination among the Town Administrator, Public Works Director, additional Town Staff, and the company selected to install the new water meters. The Town staff will also need training on how to use the new meters.
- Public Education and Outreach: Town staff necessary to coordinate and carry out annual public education and outreach efforts, and of course involvement and feedback from the public.

6.2 Monitoring Plan

The monitoring plan will adapt and adjust over the course of plan implementation depending on changing conditions to capture the effectiveness of the water efficiency activities, and to properly monitor water efficiency activities as they too may adapt.

6.2.1 Data Monitoring

A key aspect of the monitoring plan is data collection. Ongoing water demand monitoring of usage and demands per user category will be monitored through municipal water meter billing records maintained by the Town. Additional monitoring will occur for Project 7 deliveries to the Town, relevant weather data, annual population estimates, irrigation of parks using Project 7 , and any other that is deemed necessary to monitor. The Town may need to consider investing additional staff time to collect and maintain sufficient data for such monitoring.

6.2.2 Additional Monitoring Considerations

In addition to collecting, maintaining and tracking the monitoring data, the Town should periodically consider the following aspects for each water efficiency activity:

- Annual costs and avoided costs
- Actual water savings realized
- Public feedback
- Lessons learned
- Any significant changes relevant to the water efficiency activities
- Potential improvements for increased efficiency and ease

6.2.3 Evaluation and Communication of Monitoring Data

Evaluation and communication of the monitoring data to decision makers, along with recommendations on how to improve the effectiveness of each activity should be an ongoing process that occurs at a minimum of every two years. The more frequently this evaluation and communication occur, the less effort will be required in effectively utilizing the monitoring data and when updating the WEP.

6.2.4 Monitoring of Water Savings

Estimation of water savings for this WEP should be done on a per-capita basis by comparing recent per-capita water demands with historical per capita water demands. Depending on timing of implementation of water efficiency activities, per-capita savings may be estimated for individual water efficiency activities, or for the water efficiency activities that are overlapping. Once all water efficiency activities have been implemented, total per-capita water savings may be estimated. Additional factors should be considered that may influence per-capita water demands, such as drought, watering restrictions, or interruptions in service, when estimating per-capita water savings.

6.2.5 Data Organization and Adaptive Adjustments

Thorough and well-organized documentation of monitoring data and the associated decisions made to adapt water efficiency activities will play a key role in the success of the WEP. Maintaining thorough and well-organized documentation will provide current and future decision makers with

a clear idea of which activities have been most effective for water savings, which aspects of WEP implementation could use improvement, and will be very helpful when updates are made to the WEP.

7.0 PUBLIC REVIEW AND FORMAL APPROVAL

WWE's completion of this WEP was supported by the Town Staff who assisted in providing information on the current water system, as well as assisting in deciding upon the water efficiency activities, as well as officials from Tri-County Water, Project 7, and UVWUA. The Town Staff and Town community members will also be important during the public comment and review period, and during implementation of the water efficiency activities. The Town Staff will be critical for monitoring, recording and reviewing the effectiveness of the water efficiency activities and how they can be improved.

7.1 Public Review Process

Public review and feedback of these water efficiency activities increases their probability for successful implementation. During the WEP kickoff meeting and subsequent teleconferences among WWE and the Town, ideas on how this WEP could most effectively bring sustainable water savings to the Town were considered. Additionally, public comments were received on the draft WEP and resolutions to the public comments are provided in Appendix B. These discussions with the Town and public comments received allowed for sufficient consideration of the potential water efficiency activities that were ultimately selected by the Town.

In April 2019 WWE provided the Town a draft of the WEP, which the Town reviewed and then provided comments and feedback. WWE then incorporated these comments and feedback into the final WEP. Public notice (notice) was published in the June 6th, 2019 Montrose Daily Press publication which invited the public to attend a review of the draft WEP during the June 10th Town Board Meeting at Olathe Town Hall with Town Officials and WWE. The notice also invited the public to review a copy of the draft WEP, which was made available at the Olathe Town Hall, and to solicit comments on the draft WEP for a period of sixty days that lasted from June 8th, 2019 through August 6th, 2019 (see Appendix A).

7.2 Local Adoption and State Approval Process

After the public review process is complete the final WEP should be approved by the Town Board, then formally adopted by the local governing entity. Once the WEP is finalized the final step is to submit the final adopted WEP to the CWCB for formal State approval.

7.3 Periodic Review and Update

To keep the WEP up-to-date and effective it is important to keep the document as a work in progress. It is recommended that the Town update the WEP within seven years of the final approval from the CWCB. This update should occur by the year 2026. It is also recommended that the Town's Utility Billing Official be assigned responsibility for taking the lead in initiating the WEP update and collecting and maintaining the appropriate monitoring data specified in Section 6.

The recommended steps to revise the WEP include compiling and summarizing the appropriate monitoring data to assess the effectiveness of the water efficiency activities in meeting the goals of the WEP. This assessment should also include consideration of the items listed in Section 6.2.2. The assessment should then be reviewed among Town Officials and decision makers, who should agree upon appropriate updates and adaptations to be made to the WEP. Such updates and adaptations should then be presented to the Town Board for their approval. Once the updates are approved by the Town Board and incorporated into the WEP, the Town should then submit the updated WEP to the CWCB.

TABLES

Table 1
Water Efficiency Plan Project Team
Town of Olathe

Name	Title/Role	Expected Contribution
Wright Water Engineers, Inc.		
Peter Foster, P.E.	Project Manager	Lead overall project, direct consultant team, and perform project work
Carl Mackley, P.E.	Consultant	Review content of WEP and compose additional portions of the WEP including profile of the Town's distribution system, selection of water efficiency measures and goals, and coordinate with entities other than the Town of Olathe including Project 7, Tri-County Water, and surrounding municipalities. Direct meetings between Town of Olathe Officials and WWE and document information from meeting for inclusion into the WEP
Ben Von Thaden	Consultant	Compose significant portions of the WEP including profile of the Town's distribution system, attend meetings with Town of Olathe Officials, gather data and information from the Town for inclusion into the WEP, GIS mapping, coordination, and support the Project Manager and fellow project team members throughout development of the WEP.
Rachel Day	Consultant	Compose significant portions of the WEP including gathering of data and information from the Town for inclusion into the WEP, coordination, and support the Project Manager and fellow project team members throughout development of the WEP.
Trevor Downing	Consultant	Provide GIS assistance, contribution of content and review of the WEP document.
Hayes Lenhart, P.E.	Consultant	Provide counsel and review of the WEP, attended meetings with Town of Olathe Officials, and ensure the WWE team has organizational resources needed to successfully and efficiently complete the project.
Town of Olathe		
Patty Gabriel	Town Administrator	Project champion for the WEP; responsible for key project decisions and City Council engagement and advise WEP development related to land use planning, water efficiency goals and selection of water efficiency measures.
Wayne Trounce	Public Works Director	Profile existing water supply system, provide data on historical water demands management, future water demands, select WEP approaches and BMPs, and provide information throughout development of the WEP.
Scott Eklund	Town Billing Clerk	Provide clerical information, spatial and GIS data and information, help with development of water efficiency goals and selected measures.
Montrose County		
Lisa Goetsch	GIS Coordinator	Provide GIS information and support to WWE and Town of Olathe Officials throughout WEP development

Table 2
Historical Project 7 Retail Water Delivery to Olathe
Town of Olathe

Year	Volume of Water Purchased	Volume of Water Purchased	Annual Growth Rate
	(gallons)	(AF)	(%)
1982	55,500,000	170.3	--
1983	56,100,000	172.2	1.1%
1984	61,300,000	188.1	9.3%
1985	61,500,000	188.7	0.3%
1986	54,100,000	166.0	-12.0%
1987	57,600,000	176.8	6.5%
1988	61,000,000	187.2	5.9%
1989	60,700,000	186.3	-0.5%
1990	55,172,770	169.3	-9.1%
1991	62,260,710	191.1	12.8%
1992	66,492,359	204.1	6.8%
1993	70,243,630	215.6	5.6%
1994	78,480,399	240.8	11.7%
1995	75,603,269	232.0	-3.7%
1996	82,095,520	251.9	8.6%
1997	75,377,070	231.3	-8.2%
1998	84,280,760	258.6	11.8%
1999	77,717,120	238.5	-7.8%
2000	84,132,350	258.2	8.3%
2001	86,432,610	265.3	2.7%
2002	90,002,330	276.2	4.1%
2003	85,639,580	262.8	-4.8%
2004	83,907,060	257.5	-2.0%
2005	79,556,700	244.2	-5.2%
2006	82,677,000	253.7	3.9%
2007	86,139,400	264.4	4.2%
2008	84,627,300	259.7	-1.8%
2009	87,939,400	269.9	3.9%
2010	92,074,500	282.6	4.7%
2011	87,171,000	267.5	-5.3%
2012	86,406,000	265.2	-0.9%
2013	85,579,120	262.6	-1.0%
2014	80,447,400	246.9	-6.0%
2015	85,307,700	261.8	6.0%
2016	88,466,870	271.5	3.7%
2017	77,936,900	239.2	-11.9%
2018*	65,302,300	200.4	--
Average	75,832,412	231.8	1.2%

*2018 water purchased is only through September

Table 3
Town of Olathe Shares in the Uncompahgre Valley Water Users Association
Town of Olathe

Share Name	Customer Number	Water Right No.	Shares	Decreed Rate (CFS)	Decreed Volume (AF)	Comments
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Olathe Sweet Corn Festival	16019	2222	14	0.23	55.55	One share is considered running at 100% for 120 days. Any use beyond that, there's an excess water charge of \$1/AF.
Campo Verde HOA	16001	1529	31.2	0.52	123.79	One share is considered running at 100% for 120 days. Any use beyond that, there's an excess water charge of \$1/AF. Went over by 94.35 AF in 2016

Notes:

Column (1): Share name provided on Uncompahgre Valley Water Users Association Assessment Bill
Column (2): Customer number provided on Uncompahgre Valley Water Users Association Assessment Bill
Column (3): UVWUA water right number
Column (4): Total shares allotted to customer
Column (5): Equals Column (3) * 0.01667 (1 share = 0.01667 cubic feet per second (cfs), as set by UVWUA)
Column (6): Equals Column (3) * (1 share = 4 acre-feet (AF), as set by UVWUA)
Column (7): Comments

Table 4
Olathe's Dry Fork Water Rights Tabulation*
Town of Olathe

STRUCTURE	STRUCTURE ID	ADMINISTRATION NUMBER	ADJUDICATION DATE	APPROPRIATION DATE	DATE PLACED TO BENEFICIAL USE ¹	CASE NUMBER	DECREED RATE (CFS)	DECREED VOLUME (AF)	STATUS	PRIORITY	DECREED USES	COMMENT
Town of Olathe Pipeline	576	22523.00000	4/25/1916	9/1/1911	9/1/1911	CA2127	1.3		Absolute	126	Municipal, domestic and other purposes incident to the inhabitants of the Town of Olathe	
Moffit Spring Pipeline	682	29038.22919	12/4/1941	10/1/1912	10/1/1912	CA4573	0.3		Absolute	192	Domestic, commercial and irrigation	
East Fork Feeder Pipeline	625	30613.00000		10/25/1933	1934		1		Absolute	204		
Citizen's Reservoir (Olathe Reservoir No.2)	3651	29038.22889		9/1/1912	9/1/1912			118	Absolute	191	Storage for commercial, domestic and irrigation	
		33575.29675	10/26/1933	4/1/1931	10/26/1933	CA6466		58.67	Absolute	210	Storage for commercial, domestic and irrigation	Per decree, derives supply from Gooseberry Creek and from the Town of Olathe pipeline.
		49445.00000	12/31/1985	4/17/1985	-	85CW110		64	Conditional		Added hydroelectric power generation to other uses	
Total							2.6	241				

*Source: Water Rights for this table acquired from WWE's 2016 Town of Olathe Water Rights Assessment

Notes:

1 Date placed to beneficial use is estimated as the construction completion date unless found otherwise in the applicable decree.

Table 5
Historical Population Data
Town of Olathe

Year	Total Population	Average Annual Rate
	(1)	(2)
1990	1,263	-
1991	1,290	2.14%
1992	1,334	3.41%
1993	1,346	0.90%
1994	1,443	7.21%
1995	1,480	2.56%
1996	1,514	2.30%
1997	1,522	0.53%
1998	1,571	3.22%
1999	1,572	0.06%
2000	1,601	1.84%
2001	1,652	3.19%
2002	1,674	1.33%
2003	1,695	1.25%
2004	1,719	1.42%
2005	1,754	2.04%
2006	1,780	1.48%
2007	1,811	1.74%
2008	1,827	0.88%
2009	1,852	1.37%
2010	1,842	-0.54%
2011	1,824	-0.98%
2012	1,803	-1.15%
2013	1,794	-0.50%
2014	1,790	-0.22%
2015	1,781	-0.50%
2016	1,795	0.79%
2017	1,810	0.84%
2018	1,850	2.21%
Average (2000-2018)		1.60%

Notes:

The Town of Olathe incorporated in 1907.

Data does not exist prior to the census year 1900.

*2018 data is from Town of Olathe Administrator,
Patty Gabriel.

Column (1): Population data through 2018 is from the Colorado
Department of Local Affairs website.

Column (2): Calculated with Column (1 - present year) -
Column (1 - previous year) / Column (1 - previous
year)

Table 6
Top Municipal Water User Categories During 2017
Town of Olathe

Top Municipal Water Users during 2017		2017 Billed Municipal Water
		(gallons)
(1)	Residential	56,545,895
(2)	Churches, Schools and Government	9,282,680
(3)	Industrial	3,756,210
(4)	Businesses	2,916,880
(5)	Board of Trustees	364,600
(6)	Commercial	293,650
(7)	Stock Water	0

Note:

* Values provided by Town of Olathe from 2017 metered deliveries.

Table 7
Per-Capita Municipal Water Demand
Town of Olathe

Year	Town of Olathe Population	Project 7 Annual Delivery	Project 7 Average Daily Delivery	Project 7 Average Per- Capita Delivery
		gallons	gpd	gpcd
	(1)	(2)	(3)	(4)
1990	1,263	55,172,770	151,158	120
1991	1,290	62,260,710	170,577	132
1992	1,334	66,492,359	182,171	137
1993	1,346	70,243,630	192,448	143
1994	1,443	78,480,399	215,015	149
1995	1,480	75,603,269	207,132	140
1996	1,514	82,095,520	224,919	149
1997	1,522	75,377,070	206,513	136
1998	1,571	84,280,760	230,906	147
1999	1,572	77,717,120	212,924	135
2000	1,601	84,132,350	230,500	144
2001	1,652	86,432,610	236,802	143
2002	1,674	90,002,330	246,582	147
2003	1,695	85,639,580	234,629	138
2004	1,719	83,907,060	229,882	134
2005	1,754	79,556,700	217,964	124
2006	1,780	82,677,000	226,512	127
2007	1,811	86,139,400	235,998	130
2008	1,827	84,627,300	231,856	127
2009	1,852	87,939,400	240,930	130
2010	1,842	92,074,500	252,259	137
2011	1,824	87,171,000	238,825	131
2012	1,803	86,406,000	236,729	131
2013	1,794	85,579,120	234,463	131
2014	1,790	80,447,400	220,404	123
2015	1,781	85,307,700	233,720	131
2016	1,795	88,466,870	242,375	135
2017	1,810	77,936,900	213,526	118
2018*	1,850	65,302,300	178,910	N/A
132 gpcd - Average used to forecast demands (2000-2017)				132

Notes:

*2018 water purchased is only through September

Column (1): Population data received from Colorado Department of Local Affairs

Column (2): Number of gallons per year delivered from Project 7

Column (3): Equals Column (2) / 365 days

Column (4): Equals Column (3) / Column (1)

Table 8
Approximate Water Efficiency Activity Implementation Timeline
(For Planning Purposes Only)
Town of Olathe

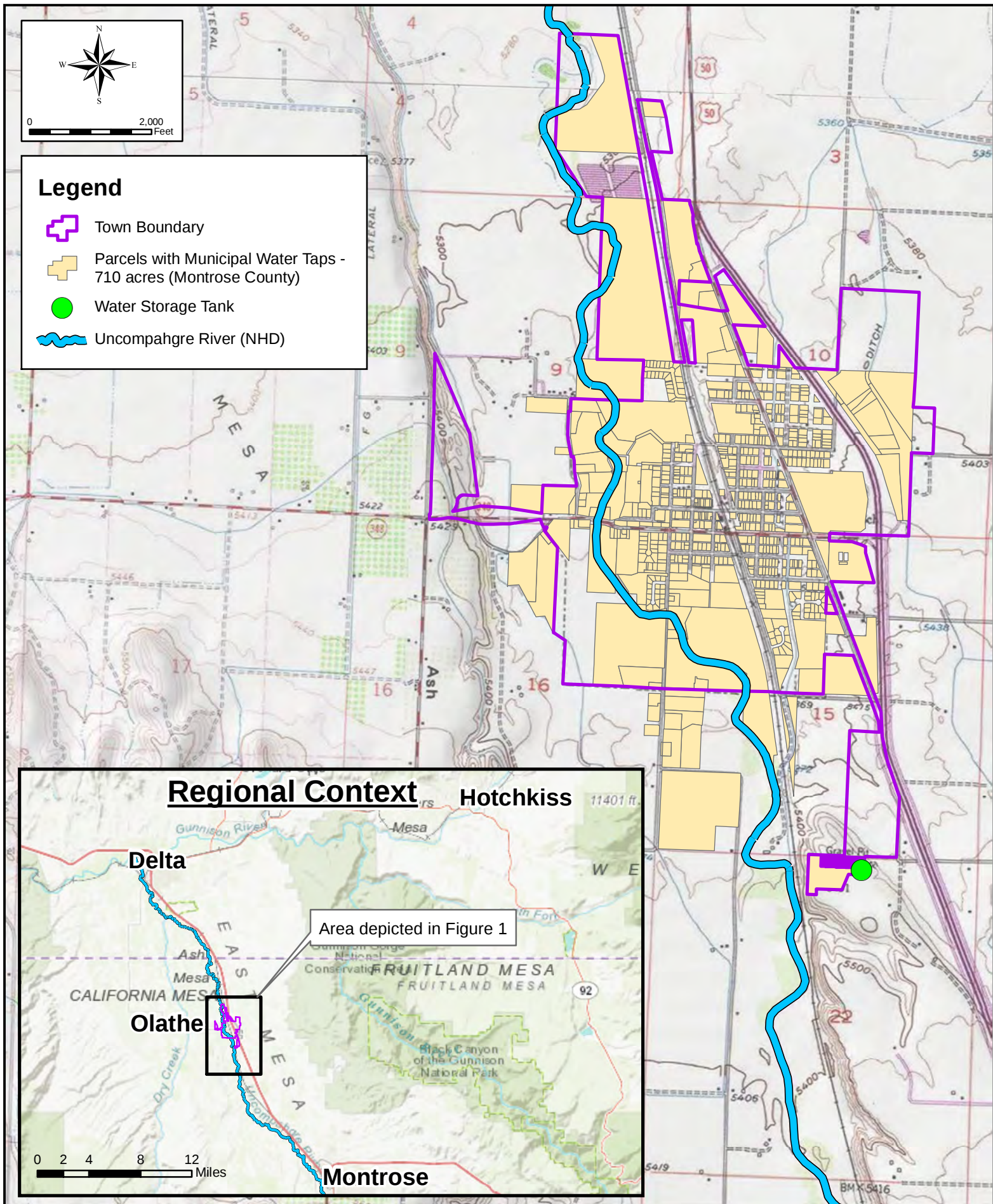
Water Efficiency Activity		Approximate Start Date*
(1)	Public Outreach and Education	One month after plan acceptance** through life of the plan
(2)	Update Municipal Water Billing Structure	One year after plan acceptance**
(3)	Perform Leak Detection Survey	Two years after plan acceptance**
(4)	Replace Aging Water Meters	Two years after plan acceptance**

Notes

*Start dates may change depending on funding availability and cost of water efficiency activity.

**Final Water Efficiency Plan must be submitted reviewed, and accepted by the CWCB prior to final issuance of grant money.

FIGURES



Date: 4/11/2019 Document Path: P:\141-059 Olathe\010\Mapping\Figure 1 - Location Map - 8.5 x 11_10.2.mxd

User Name: bvonhaden



Wright Water Engineers, Inc.
1666 N. Main Ave., Ste. C
Durango, CO 81301
(970) 259-7411 ph 259-8758 fx

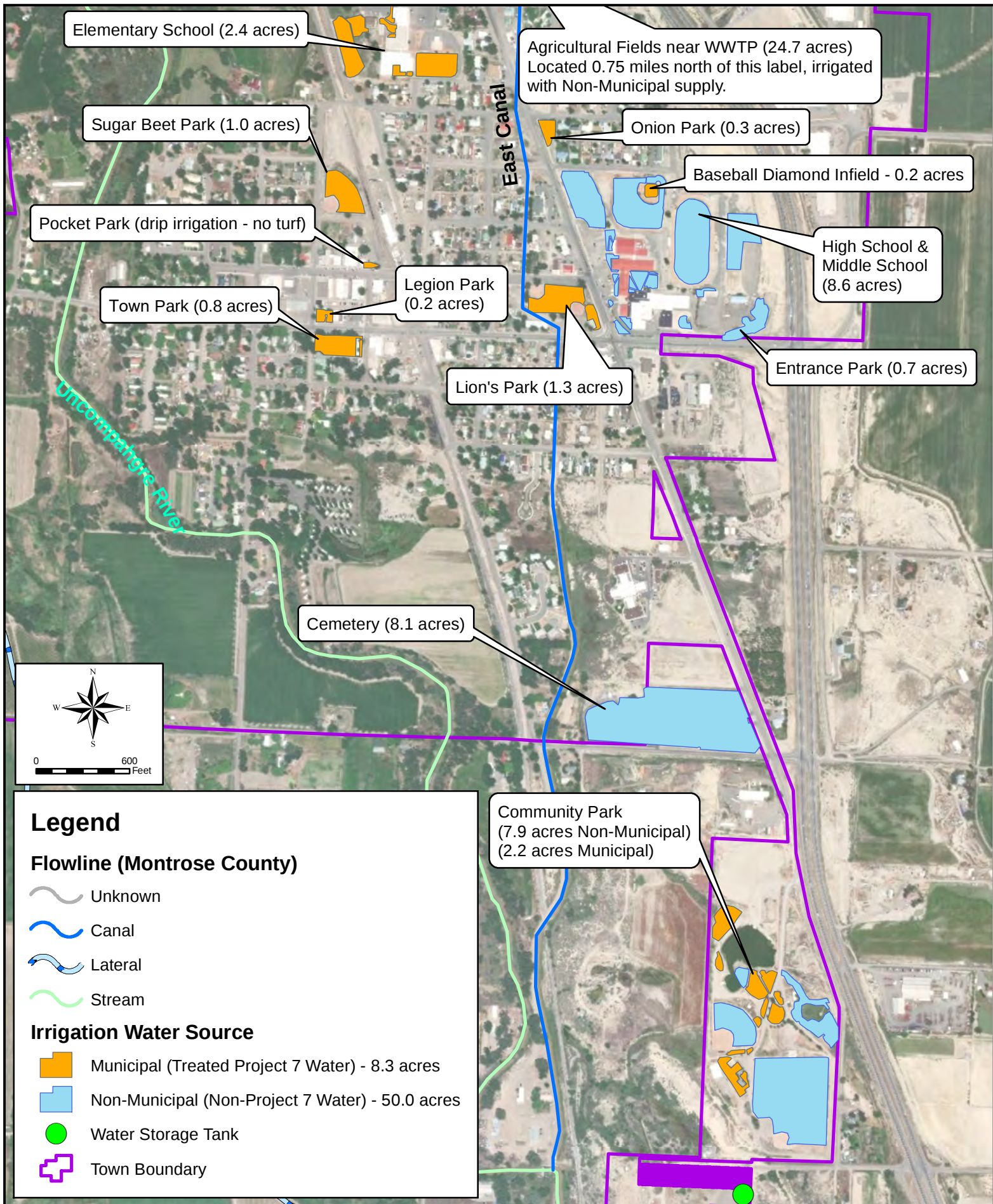
MONTROSE COUNTY, COLORADO

TOWN OF OLATHE LOCATION MAP AND PARCELS WITH MUNICIPAL WATER TAPS

TOWN OF OLATHE

PROJECT NO.
141-059.010

FIGURE
1



Date: 4/9/2019 Document Path: P:\141-059 Olathe\010Mapping\Olathe Working Map_10.2.mxd

User Name: bvonthaden



Wright Water Engineers, Inc.
1666 N. Main Ave., Ste. C
Durango, CO 81301
(970) 259-7411 ph 259-8758 fx

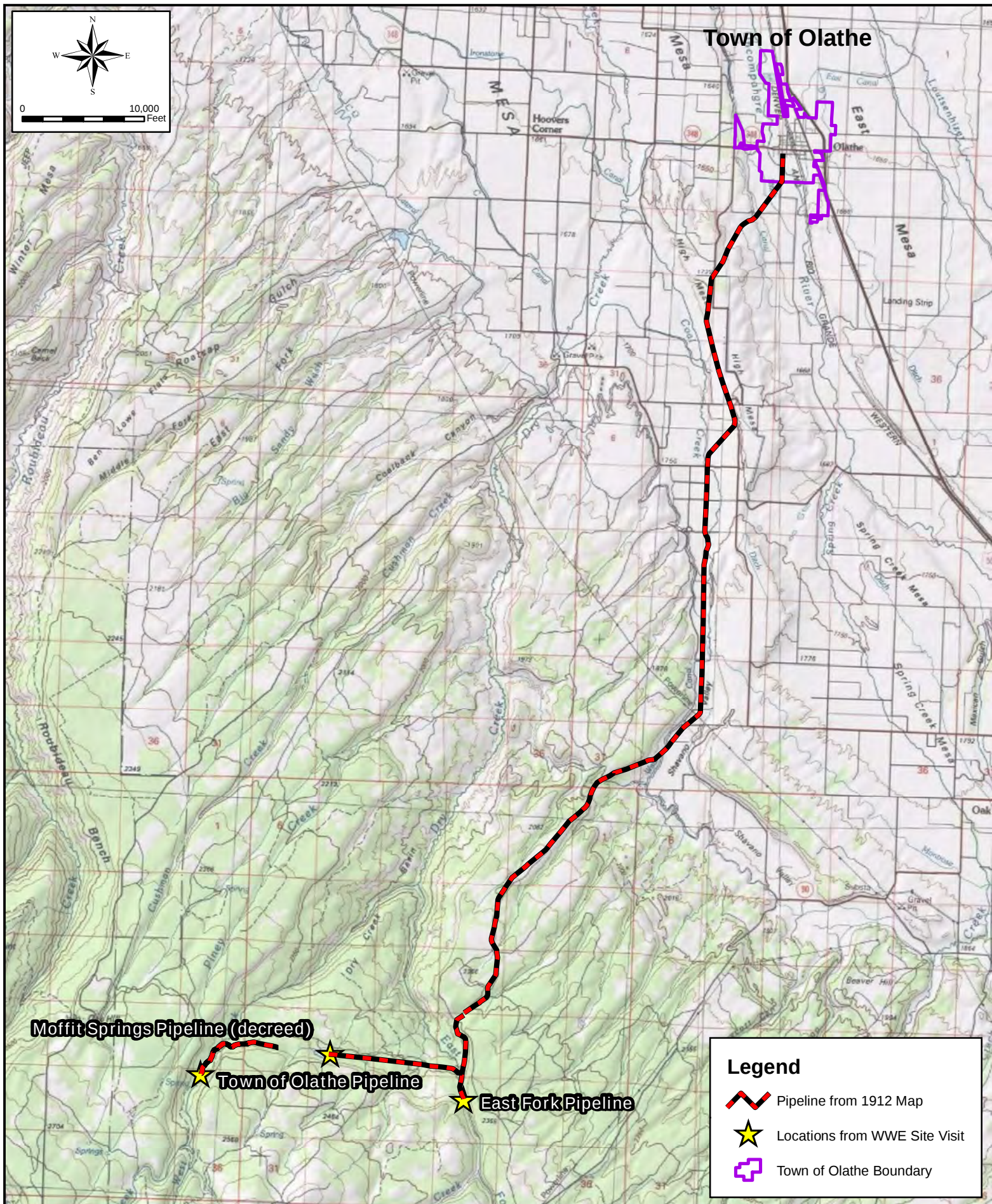
MONTROSE COUNTY, COLORADO

TOWN OF OLATHE PARKS AND IRRIGATION SOURCE

TOWN OF OLATHE

PROJECT NO.
141-059.010

FIGURE
2



Date: 4/9/2019 Document Path: P:\141-059 Olathe\010Mapping\Dry_Ck_feeder_Pipeline_to_Olathe_10.2.mxd

User Name: bvonhaden



Wright Water Engineers, Inc.
1666 N. Main Ave., Ste. C
Durango, CO 81301
(970) 259-7411 ph 259-8758 fx

MONTROSE COUNTY, COLORADO

**MOFFIT SPRINGS PIPELINE, TOWN OF OLATHE PIPELINE,
AND EAST FORK PIPELINE**

TOWN OF OLATHE

PROJECT NO.
141-059.010

FIGURE
3

Figure 4 - Population of the Town of Olathe

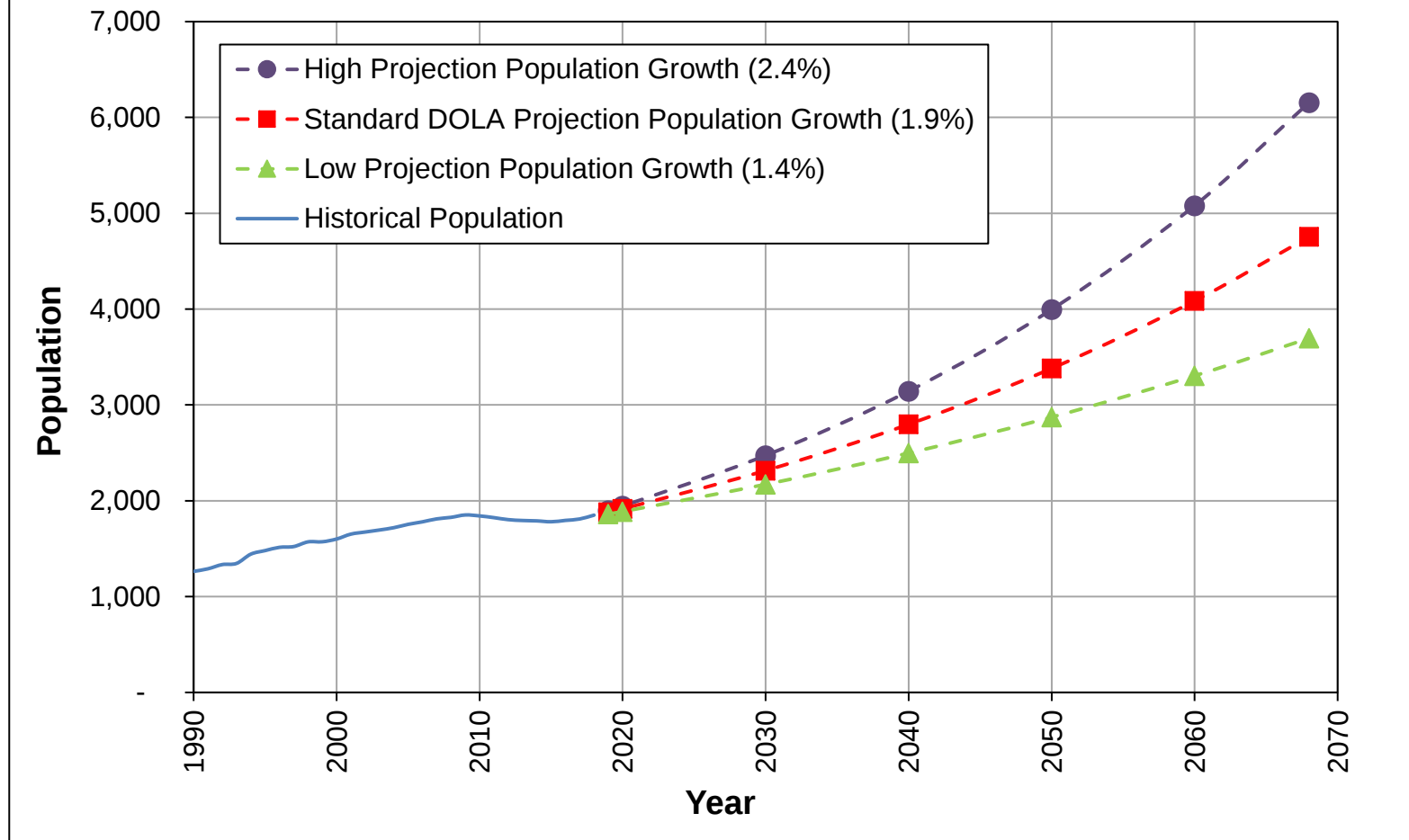


Figure 5 - Historical Project 7 Water Delivery to Olathe

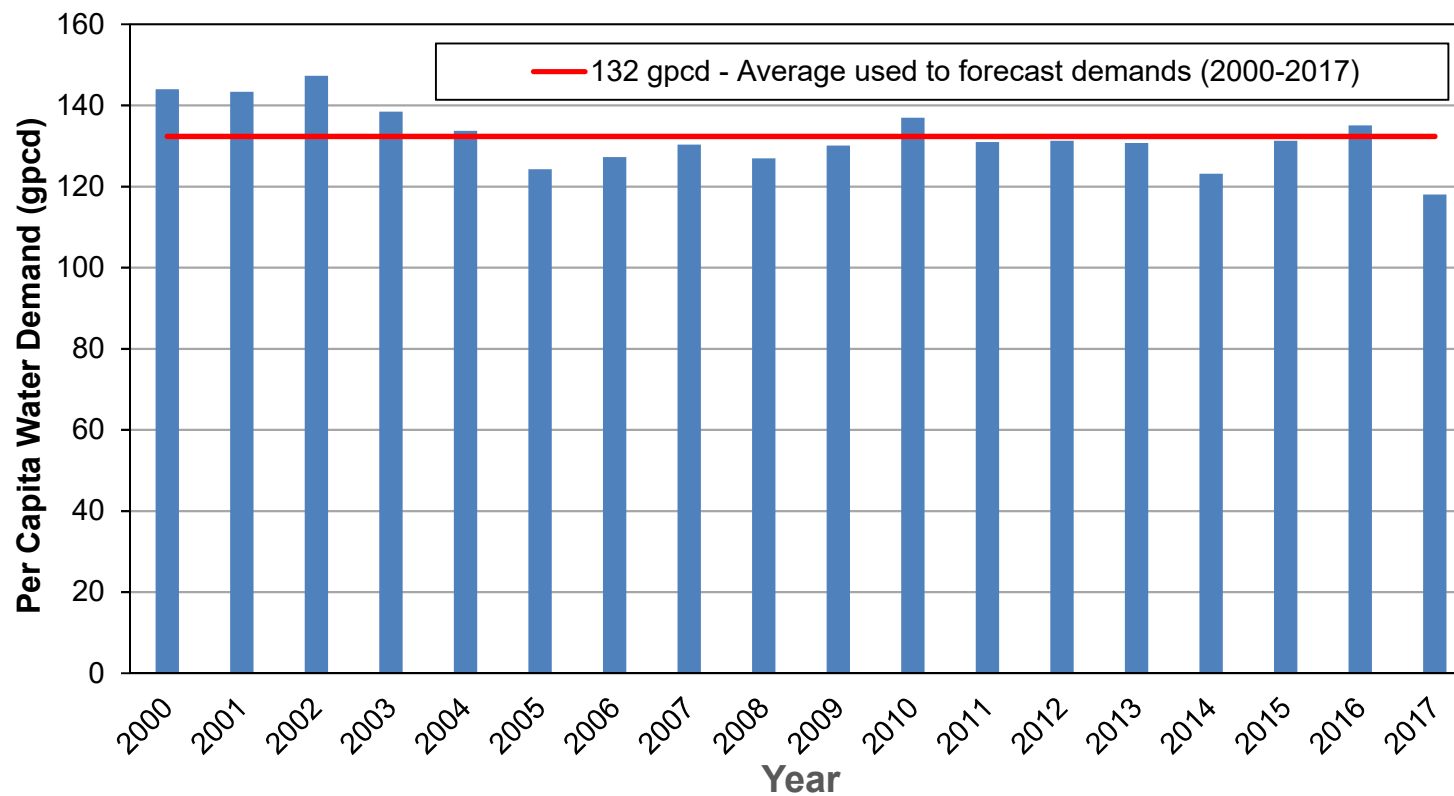
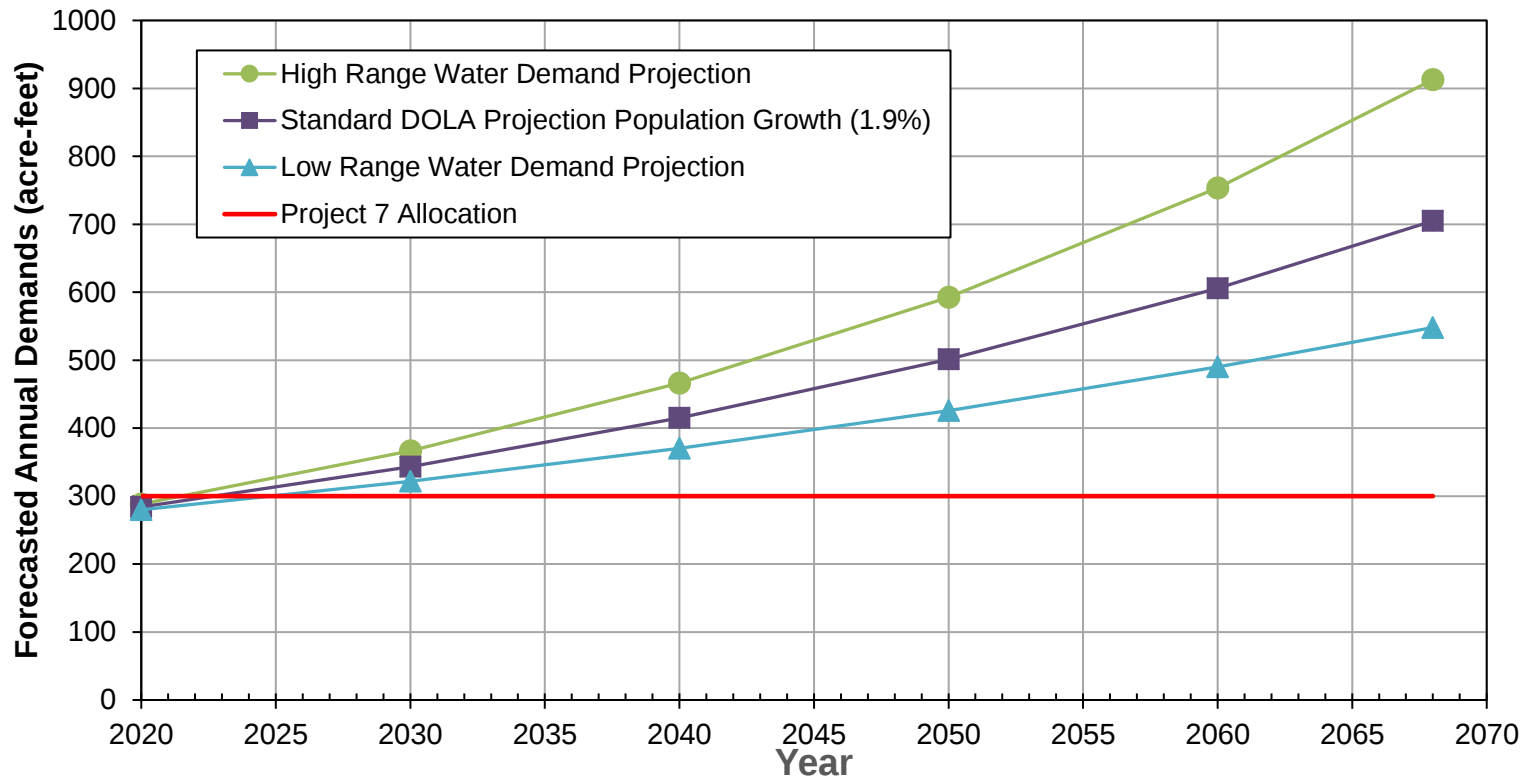
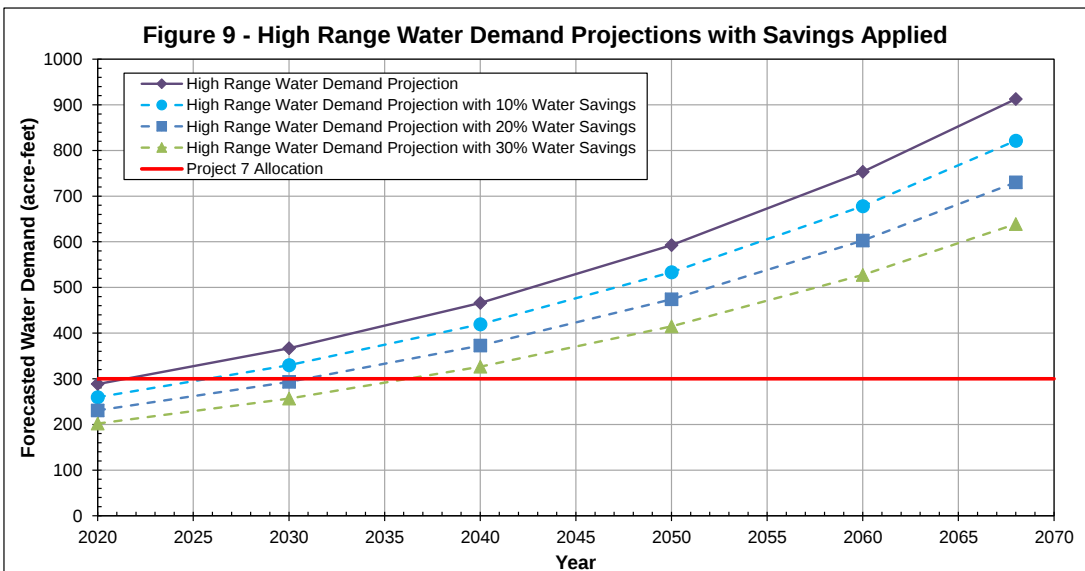
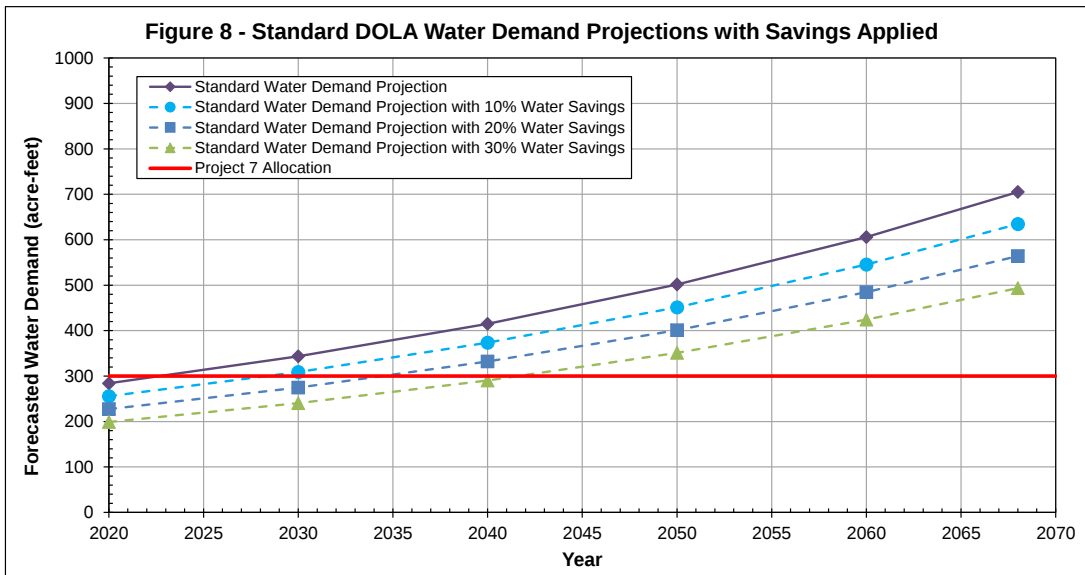
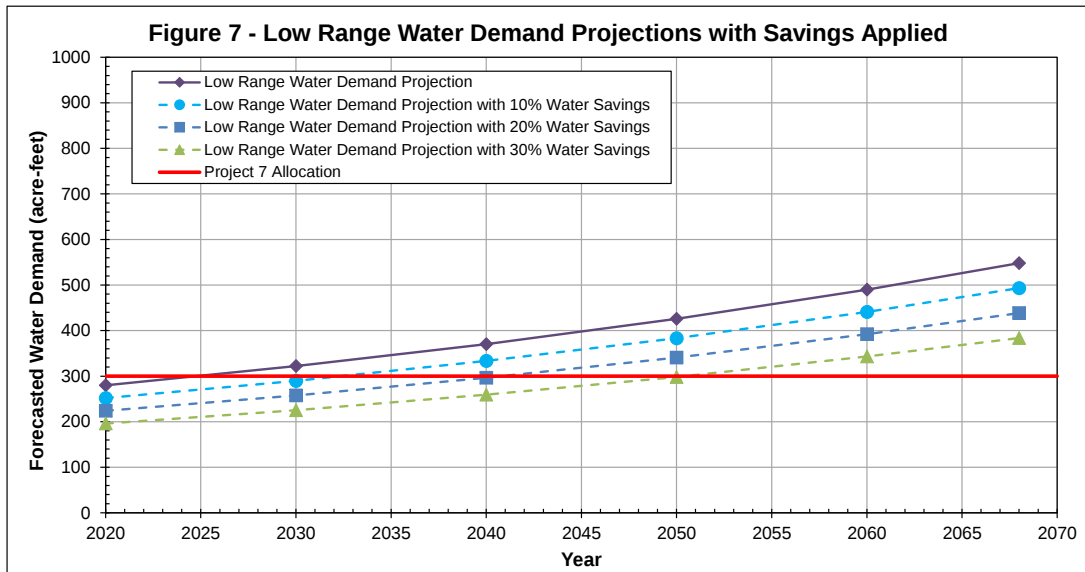
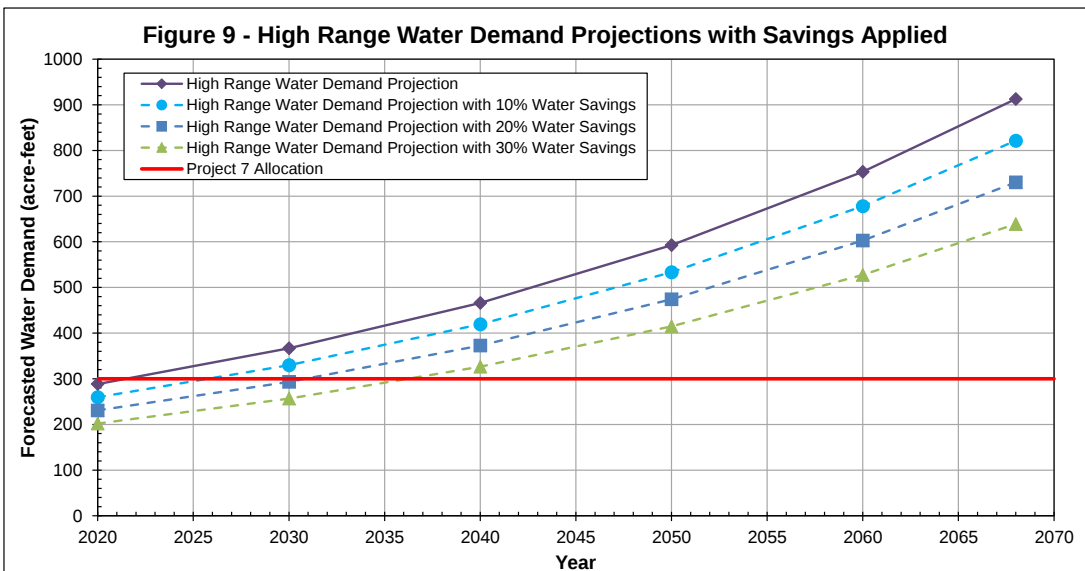
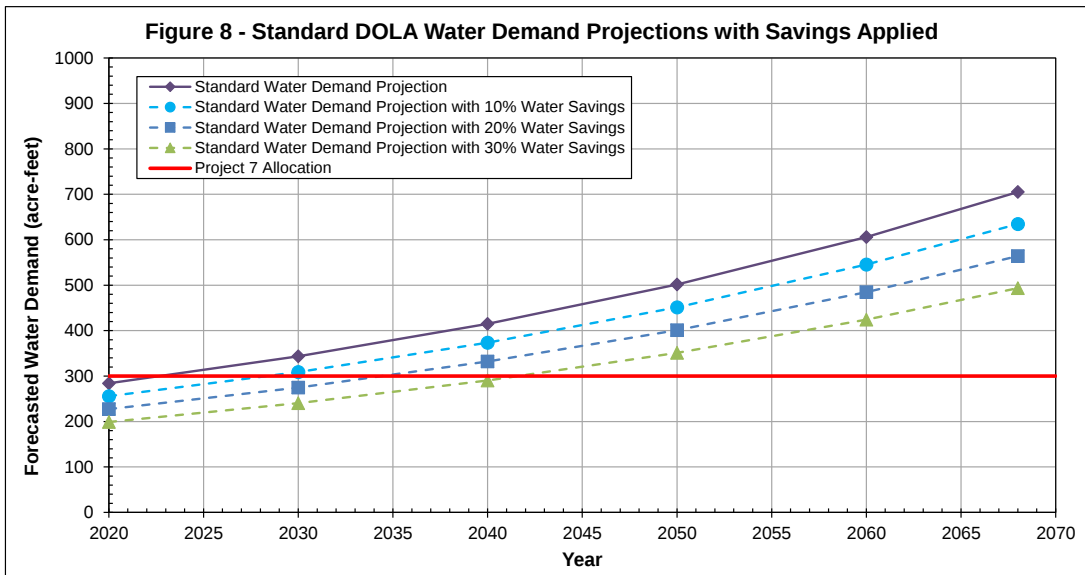
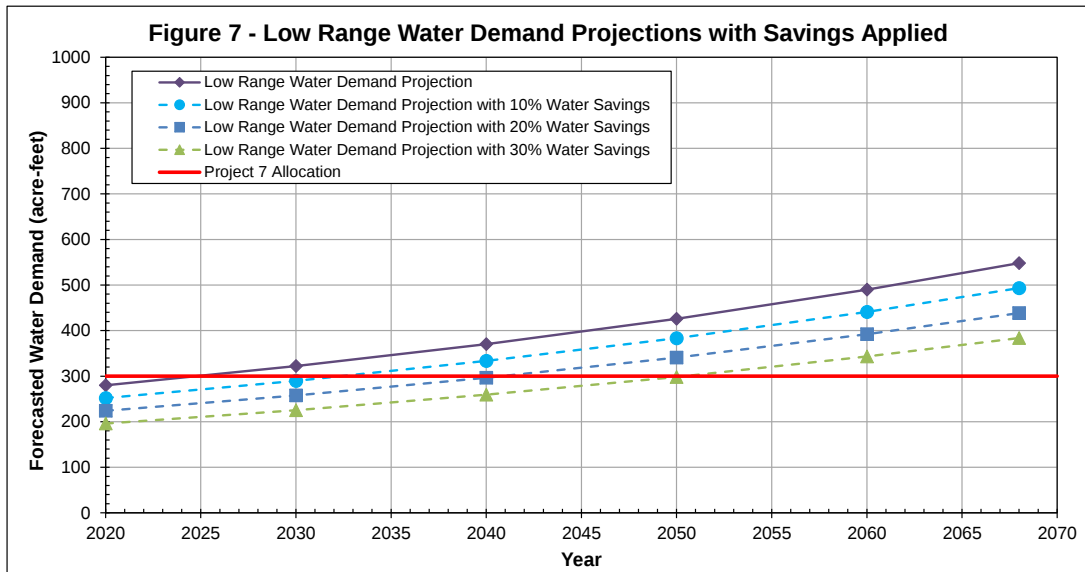


Figure 6 - Water Demand Forecast







APPENDICES

Appendix A

Proof of Publication – Public Notice of Draft Water Efficiency Plan for Public Review and Public Comment Period

collect a debt. Any information provided may be used for that purpose.

Published: 05/16/19, 05/23/19, 05/30/19, 06/06/19, 06/13/19 L-16084

FORECLOSURE SALE NO. 2019-020
To Whom It May Concern: This Notice is given with regard to the following described Deed of Trust: On March 21, 2019, the undersigned Public Trustee caused the Notice of Election and Demand relating to the Deed of Trust described below to be recorded in the County of Montrose records. Original Grantor(s) ETHEL I. KUCHLER AND RICHARD L. KUCHLER Original Beneficiary(ies) MORTGAGE ELECTRONIC REGISTRATION SYSTEMS, INC. AS NOMINEE FOR AEGIS WHOLESALE CORPORATION. ITS SUCCESSORS AND ASSIGNS Current Holder of Evidence of Debt NATIONSTAR MORTGAGE LLC D/B/A MR. COOPER Date of Deed of Trust February 02, 2005 County of Recording Montrose Recording Date of Deed of Trust February 09, 2005 Recording Information (Reception No. and/or Book/Page No.) 732674 Original Principal Amount \$112,000.00 Outstanding Principal Balance \$84,135.79 Pursuant to CRS §38-38-101(4)(i), you are hereby notified that the covenants of the deed of trust have been violated as follows: failure to pay principal and interest when due together with all other payments provided for in the evidence of debt secured by the deed of trust and other violations thereof. Therefore, the holder of the Evidence of Debt has elected to accelerate the entire indebtedness. THE LIEN FORECLOSED MAY NOT BE A FIRST LIEN. LOT 15, BLOCK 6, AMENDED PLAT OF COUNTRY CLUB ACRES. AN ADDITION TO THE CITY OF MONTROSE, COLORADO ACCORDING TO THE RECORDED PLAT HEREOF, COUNTY OF MONTROSE, STATE OF COLORADO. Also known by street and number as, 1000 SOUTH 11TH STREET, MONTROSE, CO 81401. THE PROPERTY DESCRIBED HEREIN IS ALL OF THE PROPERTY CURRENTLY ENCUMBERED BY THE LIEN OF THE DEED OF TRUST. NOTICE OF SALE The current holder of the Evidence of Debt secured by the Deed of Trust, described herein, has filed Notice of Election and Demand for sale as provided by law and in said Deed of Trust. THEREFORE, Notice is Hereby Given that I will at public auction, at 10:00 AM on Wednesday, 07/10/2019, at Office of the Public Trustee, 320 South First Street, Room 106, Montrose, CO 81401, sell to the highest and best bidder for cash, the said real property and all interest of the said Grantor(s), Grantor(s)' heirs and assigns there in, for the purpose of paying the indebtedness provided in said Evidence of Debt secured by the Deed of Trust, plus attorneys' fees, the expenses of sale and other items allowed by law, and will issue to the purchaser a Certificate of Purchase all as provided by law.

First Publication 5/16/2019
Last Publication 6/13/2019
Name of Publication The Montrose Daily Press IF THE SALE DATE IS CONTINUED TO A LATER DATE, THE DEADLINE TO FILE A NOTICE OF IN-

NOTICE OF PUBLIC MEETING

WRIGHT WATER ENGINEERS WILL PRESENT A DRAFT OF THE TOWN OF OLATHE'S WATER EFFICIENCY PLAN ON JUNE 10, 2019 AT 6:00 PM AT THE OLATHE TOWN HALL BOARD ROOM.

A COPY OF THE DRAFT WATER EFFICIENCY PLAN IS AVAILABLE FOR REVIEW AT OLATHE TOWN HALL LOCATED AT 419 S. HORTON AVENUE, OLATHE, CO AND AT WWW.TOWNOFOLATHE.ORG.

THE PUBLIC IS ENCOURAGED TO ATTEND THIS PRESENTATION AND SUBMIT COMMENTS REGARDING THE DRAFT WATER EFFICIENCY PLAN. ALL COMMENTS MUST BE SUBMITTED NO LATER THAN AUGUST 6, 2019 TO TOWN OF OLATHE, PO BOX 789 OLATHE, CO 61425.

MONIQUE GARRETT
TOWN CLERK
TOWN OF OLATHE

PUBLISHED JUNE 6, 2019
L-16129

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Appendix B

**Public Comments Received and
Resolution**

Appendix B

Black text are public comments on the Draft WEP.

Blue text are WWE's answers and resolutions to the public comments.

The following comments were received during the public comment period:

On pg 8 they say the peak usage was in 2010 but the population increased since then. How do they explain that.

Based on historical Project 7 retail water delivered to the Town the peak water usage of 282.6 AF occurred in 2010. The Town of Olathe population actually decreased from 1,842 people in 2010 to 1,781 people in 2015, and then increased to 1,850 people in 2018. The Project 7 retail water delivery also decreased from 282.6 AF in 2010 to 246.9 AF in 2014, and then increased to 271.5 AF in 2016. The Project 7 water deliveries over the 2010 through 2017 period roughly correspond to the population. It is also worth noting that the 2018 Project 7 retail water delivery in Table 2 is only through September.

On pg 10 the 50 year population projections seem quite high. What was the population 50 years ago?

According to DOLA the 1970 Town of Olathe (Town) population was 756. The 2018 Town population was 1,850. We used the equation $P = P_0 e^{rt}$ for the projection and solving for the growth rate (r), yields a growth rate of 1.86% for the 1970 through 2018 period. This growth rate is consistent with the 1.9% growth rate provided by DOLA and used in the Water Efficiency Plan (WEP).

I agree on going to a flat or aggressive rate structure to encourage conservation but its tricky to not end up with ugliness from water using businesses (eg Ridgway if you have seen that in the papers).

This is a good point, and great care should be taken in adjusting rate structures and unintended consequences. Real life examples of how changes in rate structure would affect residential and businesses is important. In addition, adjustments to rate structure can actually reduce overall revenue due to greater than anticipated reductions in water use. Thank you for this comment.

Pg 13 - Leak detection when it works is useful and could result in some savings. The CIP looked at unaccounted for water. There was some data missing but we had about 16% based on 2015 and 2016 data vs WWE saying 10-15%. Hopefully this means the Town has succeeded in reducing lost water.

The 10-15% system loss was estimated by the Town. We incorporated the CIP findings in the report. Thank you for this comment, more work is recommended on tracking unaccounted for water.

We agreed on the water meters. Think I sent you info on a program to help fund replacement that might work as a match with dola funds. Problem is how to prioritize all the capital needs.

We agree. Thank you for this comments.

I think talking with Delta and/or Montrose would be more productive than talking with tcw. Is Pete saying to use Dry Fork rights to get more Project 7 water or as a separate supply? The latter seems like a huge hurdle. Its unlikely Project 7 would be happy with Olathe doing some of each and does Olathe really want to run a water treatment plant?

We have updated the WEP to recommend that the Town begin discussions with all Project 7 participants, instead of just Tri-County Water Authority.

As noted in the WEP, preserving the Dry Fork Water Rights is a high priority to the Town as they are very important for the Town's water portfolio. It is WWE's thinking that the Town could use its Dry Fork Water Rights as a separate supply when needed. However, until the Town can increase its Project 7 allocation the Dry Fork Water Rights are the Town's most viable option to increase its water supply.

This is a good point that use of the Dry Fork Water Rights may require a new water treatment plant, and this detail has also been added to the WEP.

DENVER

2490 W. 26th Avenue Suite 100A
Denver, Colorado 80211
Phone: 303.480.1700
Fax: 303.480.1020

GLENWOOD SPRINGS

818 Colorado Avenue
P.O.Box 219
Glenwood Springs, Colorado 81602
Phone: 970.945.7755
Fax: 970.945.9210

DURANGO

1666 N. Main Avenue Suite C
Durango, Colorado 81301
Phone: 970.259.7411
Fax: 970.259.8758

www.wrightwater.com



Wright Water Engineers, Inc.