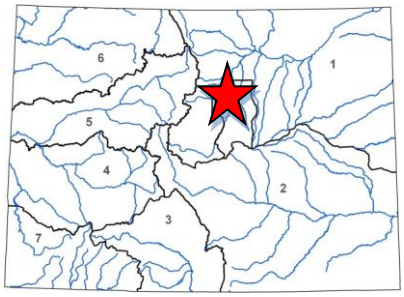
COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Reclaimed Water Feasibility Evaluation and Implementation Plan

Water Plan Grant Application

City of Westminster
March 2021 Board Meeting



LOCATION	
County/Counties:	*Adams; Jefferson*
Drainage Basin:	Metro/South Platte

DETAILS	
Total Project Cost:	$474,150
Water Plan Grant Request:	$237,075
Recommended Amount:	$0
Other CWCB Funding:	$
Other Funding Amount:	$
Applicant Match:	$237,075
Project Type(s): Study; IPP	
Project Category(Categories): Conservation and Land Use	
Measurable Result:optimize reuse system; create storage; progress towards 400KAF goal	

The purpose of the proposed project is to perform a comprehensive feasibility study that addresses challenges and provides the City with a sound, practical and clear road map for future management of its valuable reclaimed water resource.

Objectives:
1.Develop a long-term strategy for maximizing the efficiency and use of the City's available reclaimed water.
2. Improve the operating efficiency of the existing reclaimed water system through the use of additional storage or other infrastructure or operational improvements.
3. Develop a process and criteria for evaluating which customers should be part of the reclaimed water system.
4. Develop a sustainable staffing, operational, capital project and financial plan for the reclaimed water utility.

Unfortunately, this application was not recommended due to the competitive pool of applicants and judicious budgeting of funds in light of the less than optimal economic forecasts. Additionally, the review committee did not score this application as high as other applicants in the areas of collaboration, multi-use objectives and water conservation/efficiency criteria. This project was more of a supply optimization project versus a water demand project. Finally, this project seemed like a study that should be funded internally as part of Westminster's long term capital improvement projects.

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Last Updated: July 2019

Colorado Water Conservation Board

Water Plan Grant Application

Instructions

To receive funding for a Water Plan Grant, applicant must demonstrate how the project, activity, or process (collectively referred to as "project") funded by the CWCB will help meet the measurable objectives and critical actions in the Water Plan. Grant guidelines are available on the CWCB website.

If you have questions, please contact CWCB at (303) 866-3441 or email the following staff to assist you with applications in the following areas:

Water Storage Projects	Anna.Mauss@state.co.us
Conservation, Land Use Planning	Kevin.Reidy@state.co.us
Engagement & Innovation Activities	Ben.Wade@state.co.us
Agricultural Projects	Alexander.Funk@state.co.us
Environmental & Recreation Projects	Chris.Sturm@state.co.us

FINAL SUBMISSION: Submit all application materials in one email to *waterplan.grants@state.co.us*
in the original file formats [Application (word); Statement of Work (word); Budget/Schedule (excel)]. Please do not combine documents. In the subject line, please include the funding category and name of the project.

Water Project Summary

Name of Applicant	City of Westminster
Name of Water Project	Reclaimed Water Feasibility Evaluation and Implementation Plan

CWP Grant Request Amount	$237,075
Other Funding Sources _____	$
Other Funding Sources _____	$
Other Funding Sources _____	$
Applicant Funding Contribution	$237,075
Total Project Cost	$474,150

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Applicant & Grantee Information
Name of Grantee(s) City of Westminster
Mailing Address 6575 W. 88th Ave., Westminster, CO 80031
FEIN 84-6000726
Organization Contact Max Kirschbaum
Position/Title Director, Public Works and Utilities
Email mkirschb@cityofwestminster.us
Phone 303-658-2193
Grant Management Contact Megan Orloff
Position/Title Senior Water Resources Engineer
Email morloff@CityofWestminster.us
Phone 303-658-2426
Name of Applicant (if different than grantee) Ellen McDonald, PhD, PE (Plummer Associates, Inc.)
Mailing Address 1320 S. University Drive, Suite 300 Fort Worth, Texas 76107
Position/Title Principal, Water Planning Practice Leader
Email emcdonald@plummer.com
Phone 817.806.1714

Description of Grantee/Applicant
Provide a brief description of the grantee's organization (100 words or less).
The City of Westminster is located in Adams and Jefferson Counties, northwest of Denver and currently has a population of approximately 114,000. Water and wastewater facilities are managed within the Public Works and Utilities Department. The City has two water treatment facilities capable of producing a total of 59 million gallons per day of treated drinking water. In addition, the City owns and operates the Big Dry Creek Wastewater Treatment Facility and a Reclaimed Water Treatment Facility that produces reclaimed water for delivery to the City's reclaimed water distribution system.

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Type of Eligible Entity (check one)	
x	**Public (Government):** Municipalities, enterprises, counties, and State of Colorado agencies. Federal agencies are encouraged to work with local entities. Federal agencies are eligible, but only if they can make a compelling case for why a local partner cannot be the grant recipient.
	Public (Districts): Authorities, Title 32/special districts (conservancy, conservation, and irrigation districts), and water activity enterprises.
	Private Incorporated: Mutual ditch companies, homeowners associations, corporations.
	Private Individuals, Partnerships, and Sole Proprietors: Private parties may be eligible for funding.
	Non-governmental organizations (NGO): Organization that is not part of the government and is non-profit in nature.
	Covered Entity: As defined in Section 37-60-126 Colorado Revised Statutes.

Type of Water Project (check all that apply)	
x	Study
	Construction
	Identified Projects and Processes (IPP)
	Other

Category of Water Project (check the primary category that applies and include relevant tasks)	
	Water Storage - Projects that facilitate the development of additional storage, artificial aquifer recharge, and dredging existing reservoirs to restore the reservoirs' full decreed capacity and Multi-beneficial projects and those projects identified in basin implementation plans to address the water supply and demand gap.. *Applicable Exhibit A Task(s):*
x	Conservation and Land Use Planning - Activities and projects that implement long-term strategies for conservation, land use, and drought planning. *Applicable Exhibit A Task(s):* All tasks presented in Exhibit A (Tasks A-J) are applicable to this category
	Engagement & Innovation - Activities and projects that support water education, outreach, and innovation efforts. Please fill out the Supplemental Application on the website. *Applicable Exhibit A Task(s):*
	Agricultural - Projects that provide technical assistance and improve agricultural efficiency. *Applicable Exhibit A Task(s):*
	Environmental & Recreation - Projects that promote watershed health, environmental health, and recreation. *Applicable Exhibit A Task(s):*

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	Other	Explain:

Location of Water Project	
Please provide the general county and coordinates of the proposed project below in **decimal degrees**. The Applicant shall also provide, in Exhibit C, a site map if applicable.	
County/Counties	Adams, Jefferson
Latitude	39° 50' 11.95" N
Longitude	105° 2' 13.937" W

Water Project Overview
Please provide a summary of the proposed water project (200 words or less). Include a description of the project and what the CWP Grant funding will be used for specifically (e.g., studies, permitting process, construction). Provide a description of the water supply source to be utilized or the water body affected by the project, where applicable. Include details such as acres under irrigation, types of crops irrigated, number of residential and commercial taps, length of ditch improvements, length of pipe installed, and area of habitat improvements, where applicable. If this project addresses multiple purposes or spans multiple basins, please explain. The Applicant shall also provide, in Exhibit A, a detailed Statement of Work, Budget, Other Funding Sources/Amounts and Schedule.

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The City first developed its reclaimed water system in 1999. The existing system has served the City well. They are proactively planning for the highest and best use of reclaimed water in the future in light of the following challenges:

1. Due to increased water efficiency, reclaimed water supply hasn't grown to the extent originally anticipated, creating a challenge with balancing supply and demand during peak irrigation periods.
2. With the advancement of research, understanding and implementation of potable reuse nationally, the City is interested in evaluating the long-term feasibility of implementing potable reuse.
3. The system is aging, and a robust asset management and renewal plan is needed.
4. The City needs to update its policy for evaluating the "business case" for expanding service and connecting new customers. With typical peak summer demands already straining supply, a management strategy is needed to help guide further development of the system.

The purpose of the proposed project is to perform a comprehensive feasibility study that addresses these challenges and provides the City with a sound, practical and clear road map for future management of its valuable reclaimed water resource. CWP Grant funding will be used to support this feasibility study.

Measurable Results

To catalog measurable results achieved with the CWP Grant funds, please provide any of the following values as applicable:

Amount is unknown, but identification of new storage options is a primary goal of the study	New Storage Created (acre-feet)
A primary goal of this project is to develop winter and shoulder season reclaimed water (that has not previously been used) as additional supply.	New Annual Water Supplies Developed or Conserved (acre-feet), Consumptive or Nonconsumptive
N/A	Existing Storage Preserved or Enhanced (acre-feet)
N/A	Length of Stream Restored or Protected (linear feet)
A primary goal of this project is to offset potable water demands with reclaimed water by taking advantage of winter and	Efficiency Savings (indicate acre-feet/year OR dollars/year)

shoulder season reclaimed water supply (that has not previously been used).		
N/A	Area of Restored or Preserved Habitat (acres)	
N/A	Quantity of Water Shared through Alternative Transfer Mechanisms	
114,000 (City of Westminster population)	Number of Coloradans Impacted by Incorporating Water-Saving Actions into Land Use Planning	
N/A	Number of Coloradans Impacted by Engagement Activity	
	Other	Explain:

Water Project Justification

Provide a description of how this water project supports the goals of Colorado's Water Plan, the most recent Statewide Water Supply Initiative, and the applicable Roundtable Basin Implementation Plan and Education Action Plan. The Applicant is required to reference specific needs, goals, themes, or Identified Projects and Processes (IPPs), including citations (e.g. document, chapters, sections, or page numbers).

The proposed water project shall be evaluated based upon how well the proposal conforms to Colorado's Water Plan Framework for State of Colorado Support for a Water Project (CWP, Section 9.4, pp. 9-43 to 9-44;)

The purpose of the proposed project is to perform a comprehensive feasibility study provides the City of Westminster with a sound, practical and clear road map for future management of its reclaimed water. The plan will help the City maximize the efficiency of its reclaimed water supply and focus on pursuing the highest and best uses of this supply. Below is a summary of how this project supports the goals of each of the plans and initiatives cited above.

Colorado's Water Plan

Item Description	Citation	How Project Supports Goal
Value: productive economy that supports vibrant and sustainable cities	Section 10.1, page 10-3	Maximizing and achieving the highest and best use of the City's reclaimed water will conserve other water supplies and help support continued economic prosperity for Westminster and other basin communities.
Value: Efficient and effective water infrastructure	Section 10.1, page 10-3	Improving the efficiency and effectiveness of the City's reclaimed water system is a primary goal of the project. The project will: • evaluate the use of storage to better utilize the existing supplies • evaluate the most efficient and cost-effective strategy for bringing on new customers to the system; and

		• evaluate the long-term potential for converting some or all of the supply for potable use
Goal: Reduce supply-demand gap	Section 10.2, page 10-5	This project will evaluate the most efficient and highest and best uses of the City's reclaimed water. Maximizing the use of its reclaimed water will help conserve other supplies, thus reducing the supply-demand gap.
Goal: Conservation	Section 10.2, page 10-5	The City proactively manages a very strong water conservation program that applies to all users, including those using reclaimed water. This study will evaluate current water conservation programs as they apply to the reclaimed water system and identify any opportunities for increased conservation and water efficiency.
Goal: Storage	Section 10.2, page 10-6	A key objective of this project is to evaluate options to develop additional storage for the City's reclaimed water so that additional demands can be met with this supply. Storage options to be evaluated include surface storage, ground or elevated storage and aquifer storage.

Statewide Water Supply Initiative (SWSI)

Item Description	**Citation**	**How Project Supports Goal**
Objective: Sustainably meet municipal and industrial demands	Section 9.3, p. 9-5	Reclaimed water is a sustainable supply. This project will evaluate the most efficient and highest and best uses of the City's reclaimed water for meeting the City's demands.
Objective: Optimize existing and future water supplies	Section 9.3, p. 9-5	This project will evaluate strategies for maximizing the use of the City's reclaimed water. Maximizing reusable water is a key measure associated with this objective in the SWSI.
Objective: Promote cost effectiveness	Section 9.3, p. 9-6	A key goal of this project is to identify the most efficient and cost-effective plan for use of the City's reclaimed water. A cost/benefit analysis will be performed to ensure that the City can achieve the greatest possible benefit for the associated cost.
Objective: Protect cultural values	Section 9.3, p. 9-6	This project seeks to maximize the use of reclaimed water as a sustainable supply to support a robust economy and allow the citizens of Westminster to

		maintain (or improve) their quality of life.
Objective: Provide for operational flexibility	Section 9.3, p. 9-6	A primary goal of the proposed project is to evaluate infrastructure and operational options that will provide for more operational flexibility and efficiency of the reclaimed water system. Evaluation of storage options and developing a plan for how many and which customers to serve will help meet this objective.
Objective: Comply with all applicable laws, regulations and water rights	Section 9.3, p. 9-6	This project will comply with all applicable laws, regulations and water rights

Basin Implementation Plan (South Platte)

Item Description	Citation	How Project Supports Goal
Objective: Maintain leadership in conservation and reuse and implement additional measures to reduce water consumption rates	Executive Summary, Section, S.5.2, p. S-12	The City has been a leader in the implementation of water reuse in Colorado. This project will seek to further optimize the use of reclaimed water for the City, thereby increasing the efficiency of its existing supplies.
Objective: Maximize the use and effectiveness of native South Platte supplies	Executive Summary, Section S.5.3, p. S-13	The majority of Westminster's raw water supply originates in the South Platte Basin. This project will optimize the implementation of reuse and help meet the objective of maximizing the use and effectiveness of these supplies.
Objective: Manage the risk of increased demands and reduced supplies due to climate change	Executive Summary, Section S.5.8, p. S-15	Optimizing and maximizing the use of reclaimed water will help provide additional resiliency to address the potential for increased demands and the reduction of other supplies as a result of climate change.
Objective: Research new technologies and strategies	Executive Summary, Section S.5.10, p. S-16	This project will research and evaluate several innovative strategies to optimize the use of the City's reclaimed water. The use of aquifer storage and recovery will be evaluated to provide storage for the reclaimed water system. In addition, an evaluation of technologies and costs for long-term implementation of direct potable reuse will also be performed.

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Statewide Water Education Action Plan

Item Description	Citation	How Project Supports Goal
The Statewide Water Education Action Plan defines 10 specific outcomes related to outreach and education.	Executive Summary, Pages 6-8.	Public outreach is not anticipated to be a major portion of the proposed project since it will just be in the feasibility evaluation phase. However, the City of Westminster does provide ongoing outreach programs related to its water efficiency plan, as well as its rate increase proposals that support achieving these outcomes.

Related Studies

Please provide a list of any related studies, including if the water project is complementary to or assists in the implementation of other CWCB programs.

Previous related studies:

1. Extended Reclaimed Water Master Plan, February 2007
2. Reclaimed Water System Master Plan Update, February 2016
3. Water Resources Asset Master Plan, January 2018
4. Water Conservation Plan, 2013 (in process of 2020 update)

Previous CWCB Grants, Loans or Other Funding

List all previous or current CWCB grants (including WSRF) awarded to both the Applicant and Grantee. Include: 1) Applicant name; 2) Water activity name; 3) Approving RT(s); 4) CWCB board meeting date; 5) Contract number or purchase order; 6) Percentage of other CWCB funding for your overall project.

Water Conservation Plan, 2013

1) Applicant name: Stu Feinglas
2) Water activity name: Water Conservation Plan
3) Approving RT(s): Veva Deheza
4) CWCB board meeting date: Award letter received 7/12/2010
5) Contract number: OE PDA 11000000004
6) Percentage of other CWCB funding: 0%

Taxpayer Bill of Rights

The Taxpayer Bill of Rights (TABOR) may limit the amount of grant money an entity can receive. Please describe any relevant TABOR issues that may affect your application.

N/A

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Submittal Checklist	
x	I acknowledge the Grantee will be able to contract with CWCB using the Standard Contract.
Exhibit A	
x	Statement of Work(1)
x	Budget & Schedule(1)
	Engineer's statement of probable cost (projects over $100,000)
x	Letters of Matching and/or Pending 3rd Party Commitments(1)
Exhibit C	
x	Map (if applicable)(1)
	Photos/Drawings/Reports
	Letters of Support (Optional)
x	Certificate of Insurance (General, Auto, & Workers' Comp.) (2)
	Certificate of Good Standing with Colorado Secretary of State(2)
x	W-9(2)
	Independent Contractor Form(2) (If applicant is individual, not company/organization)
Engagement & Innovation Grant Applicants ONLY	
	Engagement & Innovation Supplemental Application(1)

(1) Required with application.
(2) Required for contracting. While optional at the time of this application, submission can expedite contracting upon CWCB Board approval.

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ENGAGEMENT & INNOVATION GRANT FUND SUPPLEMENTAL APPLICATION

Introduction & Purpose

Colorado's Water Plan calls for an outreach, education, public engagement, and innovation grant fund in Chapter 9.5.

The overall goal of the Engagement & Innovation Grant Fund is to enhance Colorado's water communication, outreach, education, and public engagement efforts; advance Colorado's water supply planning process; and support a statewide water innovation ecosystem.

The grant fund aims to engage the public to promote well-informed community discourse regarding balanced water solutions statewide. The grant fund aims to support water innovation in Colorado. The grant fund prioritizes measuring and evaluating the success of programs, projects, and initiatives. The grant fund prioritizes efforts designed using research, data, and best practices. The grant fund prioritizes a commitment to collaboration and community engagement. The grant fund will support local and statewide efforts.

The grant fund is divided into two tracks: engagement and innovation. The Engagement Track supports education, outreach, communication, and public participation efforts related to water. The Innovation Track supports efforts that advance the water innovation ecosystem in Colorado.

Application Questions

*The grant fund request is referred to as "project" in this application.

Overview (answer for both tracks)
In a few sentences, what is the overall goal of this project? How does it achieve the stated purpose of this grant fund (above)?
Who is/are the target audience(s)? How will you reach them? How will you involve the community?
Describe how the project is collaborative or engages a diverse group of stakeholders. Who are the partners in the project? Do you have other funding partners or sources?

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Overview (answer for both tracks)
Describe how you plan to measure and evaluate the success and impact of the project?
What research, evidence, and data support your project?
Describe potential short- and long-term challenges with this project.

Please fill out the applicable questions for either the Engagement Track or Innovation Track, unless your project contains elements in both tracks. If a question does not relate to your project, just leave it blank. Please answer each question that relates to your project. Please reference the relevant documents and use chapters and page numbers (Colorado's Water Plan, Basin Implementation Plan, PEPO Education Action Plan, etc.).

Engagement Track
Describe how the project achieves the education, outreach, and public engagement measurable objective set forth in Colorado's Water Plan to "significantly improve the level of public awareness and engagement regarding water issues statewide by 2020, as determined by water awareness surveys."
Describe how the project achieves the other measurable objectives and critical goals and actions laid out in Colorado's Water Plan around the supply and demand gap; conservation; land use; agriculture; storage; watershed health, environment, and recreation; funding; and additional.
Describe how the project achieves the education, outreach, and public engagement goals set forth in the applicable Basin Implementation Plan(s).

Describe how the project achieves the basin roundtable's PEPO Education Action Plans.

Innovation Track
Describe how the project enhances water innovation efforts and supports a water innovation ecosystem in Colorado.
Describe how the project engages/leverages Colorado's innovation community to help solve our state's water challenges.
Describe how the project helps advance or develop a solution to a water need identified through TAP-IN and other water innovation challenges. What is the problem/need/challenge?
Describe how this project impacts current or emerging trends; technologies; clusters, sectors, or groups in water innovation.

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Colorado Water Conservation Board
Water Plan Grant - Exhibit A

Statement Of Work	
Date:	August 1, 2020
Name of Grantee:	City of Westminster
Name of Water Project:	Reclaimed Water Feasibility Evaluation and Implementation Plan
Funding Source:	Water Plan Grant and City of Westminster capital project funding

Water Project Overview:

The City completed construction of its Reclaimed Water Treatment Facility (RWTF) in 1999 and began delivering reclaimed water to customers in 2000. Since this time, the City has developed a reclaimed water system that currently consists of approximately 27 miles of distribution pipelines that deliver reclaimed water to several golf courses and parks, as well as numerous commercial and residential green space areas for irrigation.

While the existing system has served the City well, they are proactively planning for the highest and best use of reclaimed water in the future in light of the following challenges:

1. Due to increased indoor water efficiency, reclaimed water supply is not growing to the extent originally anticipated, and has decreased by 3% over the last 5 years. Previous planning efforts identified 3500 acre-feet of reclaimed water supply at the City's buildout, whereas the recent historical system volume has averaged 1900 acre-feet. This decline in supply has already created a challenge with balancing supply and demand during peak irrigation periods, even before the City's buildout. The reclaimed system has opportunity for optimization. Indoor water efficiency is a vital component of the City's and the State's water planning and this trend will continue. The City plans to evaluate the future reclaimed water supply in light of this efficiency trend.
2. With the advancement of research, understanding and implementation of potable reuse nationally, the City plans to evaluate the long-term feasibility of implementing potable reuse.
3. The system is aging, and a robust asset management and renewal plan is needed.
4. The City needs to update its process or policy for evaluating the "business case" for expanding service and connecting new customers to the system. With typical peak summer demands already straining supply due to indoor water efficiency, and further indoor and outdoor water efficiency anticipated, a management strategy is needed to help guide further development and optimization of the system. The City plans to use this management strategy to guide new connections or adjustments to existing connections in light of changing attitudes towards outdoor water use.

The purpose of the proposed project is to perform a comprehensive feasibility study that addresses these challenges and provides the City with a sound, practical and clear implementation plan for future management of its valuable reclaimed water resource.

Project Objectives:

1. Develop a long-term strategy for maximizing the efficiency and use of the City's available reclaimed water.
2. Improve the operating efficiency of the existing reclaimed water system through the use of additional storage or other infrastructure or operational improvements.
3. Develop a process and criteria for evaluating which customers should be part of the reclaimed water system.
4. Develop a sustainable staffing, operational, capital project and financial plan for the reclaimed water utility.

Tasks
Task A – COMPILE AND REVIEW EXISTING DATA AND INFORMATION
Description of Task:
Gather, review and summarize data and other information related to the reclaimed water system.
Method/Procedure:
1. Gather, review, and summarize data and other information related to the City's reclaimed water system. Information may include (but not be limited to) GIS data, master plans, hydraulic models, construction drawings, reclaimed water quality data, historical customer usage data, reclaimed water treatment facility flows, historical population data, projected populations, water demands, wastewater flows, and information about water conservation program implementation.
Deliverable:

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Tasks
Summary of existing data and information

Tasks
Task B – RECLAIMED WATER QUANTITY EVALUATION
Description of Task:
Review of reclaimed water flow/production data and development of future reclaimed water supply projections.
Method/Procedure:

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Tasks
1. Review the previous ten (10) years of daily reclaimed water flow data from the Reclaimed Water Treatment Facility (RWTF), including effluent from the Big Dry Creek wastewater treatment facility (BDCWWTF) and RWTF storage levels. The City saw a 3% decrease in annual BDCWWTF effluent volume over a 5-year period, from 2014 to 2018. Analysis of past data will assist with future projections and with operation optimization. 2. Review hourly production data from the RWTF and effluent from the BDCWWTP to develop/confirm a daily diurnal pattern for the reclaimed water supply. 3. Develop a spreadsheet-based flow model/accounting plan to optimize the City's usage of their three sources of water sent into the reclaimed water distribution system: the raw water interconnect, the RWTF, and the potable water standpipe. 4. Recommend methods for reducing/further optimizing peak demands by staggering irrigation timing. Evaluate the ability of the Raw Water Interconnect to peak shave. 5. Determine the historical impact of water conservation on availability of reclaimed water. 6. Develop future reclaimed water supply projections based on historical trends, population projections, and anticipated future water conservation measures. Use assumptions and scenarios from the City's 2020 Water Supply Plan.
Deliverable:
1. Spreadsheet flow model/accounting plan 2. Recommendations for optimizing peak demands 3. Future reclaimed water supply projections

Tasks
Task C – RECLAIMED WATER CUSTOMERS
Description of Task:

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Tasks
Perform evaluation of existing customers and target future customers. Develop recommendations for maintaining existing customers and taking on new customers in the future that optimizes the use of reclaimed water and City resources.
Method/Procedure:
1. Collect and review the previous ten (10) years of reclaimed water customer billing data; 2. Identify any existing customers with minimal usage that could be disconnected from the reclaimed water system; 3. Gather additional information for identification of target reclaimed water customers to be added to the system: a. Historical water use data for the City's top 100 major water users; b. Historical water use data for irrigation only meters; c. In GIS, evaluate large areas of turf for any other future opportunities; 4. Facilitate a workshop with City staff to prioritize and rank the initial list of target customers based on proximity to the existing system, estimated usage, area irrigated, infrastructure improvements required to deliver reclaimed water, and other parameters; (weighted factors to be determined by City staff). Strategy for target customers will take into account outdoor water efficiency trends. 5. Develop a GIS figure identifying preferred target customers; 6. Develop opinions of probable construction and life cycle costs for connecting up to twenty (20) additional customers to the reclaimed water system. 7. Review Westminster Municipal Code for language requiring large entities located near the reclaimed water system, or entities selected on the City's Reclaimed Water Master Plan, to connect to the system. If needed, draft additional code language and provide the draft to the City for review. Address comments from the City and provide a final draft to the City.
Deliverable:
1. Summary of historical reclaimed water usage. 2. List of target future customers and projected reclaimed water usage (annual average and peak monthly) 3. GIS data identifying preferred target customers 4. Opinions of probable cost for connecting additional customers 5. Summary of Municipal Code review and final draft of additional language (if needed)

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Tasks

Tasks
Task D – RECLAIMED WATER DISTRIBUTION SYSTEM ASSESSMENT
Description of Task:
Perform an evaluation of the performance of the existing distribution system. Review existing asset management database and develop updated asset management recommendations. Develop recommendations for infrastructure and operational improvements to the distribution system.
Method/Procedure:

1. Review the previously developed hydraulic model for the reclaimed water system.
2. Update the hydraulic model based on recent historical demand data and modifications implemented since model construction.
3. Conduct a workshop with City employees to determine areas of concern within the reclaimed water system and obtain input on infrastructure and operational improvements.
4. Review the current asset management database for the reclaimed water system and make optimization recommendations.
    a. Use PWU's existing asset management database as a starting point for evaluation, adding detail and data as needed. City staff will provide the database.
    b. Develop a short-term inspection plan and a long-term investment plan.
5. Identify modifications to the reclaimed water system based on results of City workshop and condition assessments. Develop opinions of probable construction and life cycle costs for modifications identified. Develop maintenance program recommendations. Modifications may include but are not limited to:
    a. Replace malfunctioning valves and insert additional valves;
    b. Cathodic protection program;
    c. Parallel pipeline near major intersections;
    d. Utilize alternative water meter product;
    e. Rehabilitate meter vaults;
    f. Incorporate pressure and flow monitoring devices;
    g. In-line hydroelectric generation;
    h. Evaluate additional pumping needs;
    i. Other modifications to be determined.
6. When applicable, create additional scenarios in the hydraulic model to evaluate the proposed modifications.
7. Assess and summarize regulatory compliance issues associated with proposed modifications.

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Tasks
Deliverable:
1. Updated hydraulic model of the reclaimed water system. 2. Short-term inspection plan. 3. Long-term investment plan. 4. Recommendations for reclaimed water system improvements. 5. Opinions of probable cost for proposed modifications.

Tasks
Task E – STORAGE EVALUATION
Description of Task:
Evaluation of options to add storage to the reclaimed water system.
Method/Procedure:
1. Evaluate up to five (5) options for additional storage for non-potable reclaimed water. Options could include (but not be limited to): a. Storage within the distribution system; b. Aquifer storage and recovery (ASR) (non-potable); c. Additional storage tank at the BDCWWTF or RWTF; 2. Develop an opinion of probable construction and life cycle cost for each storage option and prioritize/rank the options. Incorporate recommended storage option into hydraulic model, if applicable. Provide information/recommendations on permitting and regulatory impacts.
Deliverable:

Tasks
1. Summary and prioritized list of storage options. 2. Opinions of probable cost for each storage option.

Tasks
Task F – POTABLE REUSE
Description of Task:
Evaluation of options for developing potable reuse from the reclaimed water supply in the future.
Method/Procedure:
1. Review and summarize state and federal regulations and guidelines concerning potable reuse (both direct and indirect) of reclaimed water. Prepare a summary of key legal and regulatory issues. 2. Review and summarize the current state of technology regarding ASR for potable purposes. 3. Conceptually develop up to five (5) potable reuse alternatives. Establish water quality performance targets for each alternative. Collect additional water quality samples for reclaimed water produced from the RWTF, if necessary. Additional parameters could include total dissolved solids, total phosphorus, silica, aluminum, nitrate, and others. 4. Develop planning level opinions of probable construction and life cycle costs for each alternative. 5. Develop conceptual treatment and conveyance designs for each of the potable reuse alternatives. Illustrate system infrastructure for each alternative on a GIS map. Identify the general infrastructure, including but not limited to, wastewater treatment upgrades, advanced water treatment, pipelines, pump stations, etc., that is needed to treat and convey reclaimed water for potable purposes. 6. Describe waste-stream discharge treatment and disposal water quality requirements for each alternative (such as concentrate from reverse osmosis), if necessary. 7. Conduct a workshop with City staff. Through an interactive screening process, reduce the total number of potable reuse alternatives to up to three (3) and prioritize.

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Tasks
Deliverable:
1. Summary of state and federal regulations related to potable reuse. 2. Summary of current state of technology related to ASR for potable reuse. 3. Summary of potable reuse alternatives, including conceptual designs, GIS maps and opinions of probable cost.

Tasks
Task G – FINANCIAL SUSTAINABILITY EVALUATION
Description of Task:
Develop recommendations for a sustainable financial program for the reclaimed water utility.
Method/Procedure:

Tasks
1. Perform financial evaluation to determine appropriate short- and long-term revenue recovery structure and pricing structure options for reclaimed water; 2. Develop a long-term financial model for the reclaimed water system; 3. Facilitate a workshop with City staff to obtain input on financial model and evaluation. 4. Develop sustainable short- and long-term staffing, operating and capital improvement project plans for the reclaimed water utility.
Deliverable:
1. Long-term financial model of the reclaimed water system. 2. Recommendations for short- and long-term revenue recovery and pricing structure. 3. Recommendations for short- and long-term staffing, operating and capital improvement plans.

Tasks
Task H – IMPLEMENTATION PLAN
Description of Task:
Development of a phased implementation plan and schedule for the recommended actions.
Method/Procedure:

Tasks
1. Develop a phased approach and schedule for implementing recommendations identified in the project.
Deliverable:
1. List of recommended phased implementation actions 2. Recommended implementation schedule

Tasks
Task I – REPORT
Description of Task:
Development of draft and final report summarizing the project.
Method/Procedure:

Tasks
1. Prepare a draft report documenting and summarizing the results of the Reclaimed Water Master Plan Update. Provide an electronic copy and five (5) hardcopies to the City for review. 2. Facilitate a meeting with the City to receive input on the report. 3. After obtaining comments from the City at the Report Review Meeting, issue a final version of the report. Provide GIS layers and the updated hydraulic model electronically.
Deliverable:
1. Draft and final report

Tasks
Task J – PROJECT COORDINATATION AND ADDITIONAL MEETINGS
Description of Task:
Project management and administration and additional meetings not included in previous tasks.
Method/Procedure:

Last Updated: July 2019

Tasks
1. Prepare a project management plan to include scope, budget, schedule, communication plan, and project team; 2. Conduct monthly progress meetings to discuss project progress; 3. Provide monthly status updates describing and showing the percent complete for scope and tasks, issues, budget status, and schedule; 4. Prepare progress reports for submission to the CWCB; 5. Coordinate, prepare, and review monthly invoices for payment; 6. Coordinate and attend meetings including an initiation meeting, workshops, and stakeholder meetings. Prepare and submit a meeting agenda for review at least three days prior for all meetings. Draft meeting notes will be distributed within seven days following each meeting. Edited meeting minutes will be distributed within ten working days after distribution of the draft minutes. All minutes will be distributed by email in PDF format. Project meetings are anticipated as follows: a. Zero Percent Internal Quality Control (QC) Meeting: The Zero Percent QC meeting is a facilitated session where the Engineer participates in a consensus-building exercise to confirm the project goals, evaluate risks, and define the critical success factors; b. Project Initiation Meeting: conduct a project initiation meeting. In this meeting the project management plan will be reviewed and the scope, schedule, resources, responsibilities and expectations for the project will be clarified; c. Reclaimed Water Connections Prioritization Workshop (Task C) d. Distribution System Modifications Workshop (Task D) e. Potable Reuse Alternatives (Task F) f. Financial Sustainability Study Workshop (Task G) g. Report Review Meeting (Task I) h. Up to 2 additional meetings in Westminster with City management, City Council or other stakeholders
Deliverable:
1. Project management plan 2. Monthly status updates 3. Progress reports 4. Monthly invoices 5. Meeting agendas and notes

Budget and Schedule
This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

Last Updated: July 2019

Reporting Requirements

Progress Reports: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status of the tasks identified in the statement of work, including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Report: At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that:

- Summarizes the project and how the project was completed.
- Describes any obstacles encountered, and how these obstacles were overcome.
- Confirms that all matching commitments have been fulfilled.
- Includes photographs, summaries of meetings and engineering reports/designs.

The CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

Costs incurred prior to the effective date of this contract are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of this contract must be provided to CWCB in hard copy and electronic format as part of the project documentation.

Performance Measures

Performance measures for this contract shall include the following:
(a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget in Exhibit B. Per Water Plan Grant Guidelines, the CWCB will pay out the last 10% of the budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.
(b) Accountability: Per Water Plan Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per Water Plan Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment.
(c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary.
(d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.

City of Westminster
Reclaimed Water Feasibility Evaluation and Implementation Plan
Proposed Project Schedule

Task	Task	Start	End	2021												2022					
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Compile and Review Existing Data and Information	Prepare information request	1/11/2021	1/17/2021																		
	City gathering data	1/18/2021	1/31/2021																		
	Compile and review data	2/1/2021	2/14/2021																		
Reclaimed Water Quantity Evaluation	Review historical quantity data	2/15/2021	2/28/2021																		
	Develop flow accounting model	3/1/2021	3/14/2021																		
	Determine impact of conservation	3/15/2021	3/28/2021																		
	Develop future supply projections	3/29/2021	4/11/2021																		
Reclaimed Water Customers	Collect and review historical data	4/12/2021	4/25/2021																		
	Identify existing customers for removal	4/26/2021	5/9/2021																		
	Identify potential new customers and usage	5/10/2021	5/23/2021																		
	Workshop: prioritize and rank customers	5/24/2021	5/28/2021																		
	GIS figure	5/10/2021	5/23/2021																		
	Develop OPCCs for connecting customers	5/29/2021	6/13/2021																		
	Review Municipal Code	6/14/2021	6/27/2021																		
Reclaimed Water Distribution System Assessment	Review existing hydraulic model	6/28/2021	7/11/2021																		
	Update hydraulic model	7/12/2021	7/25/2021																		
	Distribution system workshop	8/30/2021	9/3/2021																		
	Review asset mgmt database	6/28/2021	7/18/2021																		
	Identify potential modifications	9/4/2021	9/19/2021																		
	Develop additional model scenarios	9/20/2021	10/3/2021																		
	Summarize regulatory compliance issues	10/4/2021	10/10/2021																		
Storage Evaluation	Develop additional storage options	7/26/2021	8/29/2021																		
	Develop OPCCs	10/4/2021	10/17/2021																		
	Model potential storage options	9/20/2021	10/3/2021																		
Potable Reuse	Review regulations and guidelines	10/18/2021	11/7/2021																		
	Review of ASR	10/18/2021	11/14/2021																		
	Develop potable reuse alternatives	11/8/2021	12/5/2021																		
	Planning level OPCCs	12/6/2021	12/19/2021																		
	Conceptual designs	12/6/2021	12/19/2021																		
	Waste-Stream Discharge Evaluation	12/6/2021	1/9/2022																		
	Workshop: Prioritization and Screening	1/10/2022	1/14/2022																		
Financial Sustainability Evaluation	Financial Evaluation	1/31/2022	2/20/2022																		
	Financial Model	2/21/2022	3/6/2022																		
	Financial Sustainability Workshop	3/14/2022	3/18/2022																		
	Staffing, operating and CIP plans	1/17/2022	1/30/2022																		
Implementation Plan	Develop implementation plan and phasing	1/31/2022	3/27/2022																		
Report	Draft report	3/14/2022	5/8/2022																		
	Report review meeting	5/9/2022	5/13/2022																		
	Final report	5/16/2022	5/29/2022																		
Project Coordination and Additional Meetings	Project Management and Coordination	1/4/2021	6/5/2022																		
	0% QC and Meeting Prep	1/4/2021	1/10/2021																		
	Kickoff Meeting	1/11/2021	1/15/2021																		
	Additional Meetings (2)	5/9/2022	6/5/2022																		

City of Westminster

Reclaimed Water Feasibility Evaluation and Implementation Plan

Proposed Project Budget- Summary

Task	Description	Fee
A	Compile and Review Existing Data and Information	$6,265
B	Reclaimed Water Quantity Evaluation	$21,120
C	Reclaimed Water Customers	$34,335
D	Reclaimed Water Distribution System Assessment	$56,205
E	Storage Evaluation	$124,575
F	Potable Reuse	$43,665
G	Financial Sustainability Evaluation	$53,450
H	Implementation Plan	$9,780
I	Report	$56,360
J	Project Coordination and Additional Meetings	$68,395
	TOTAL	**$474,150**

CWCB Grant Request Amount	$237,075
City of Westminster Matching Funds	$237,075

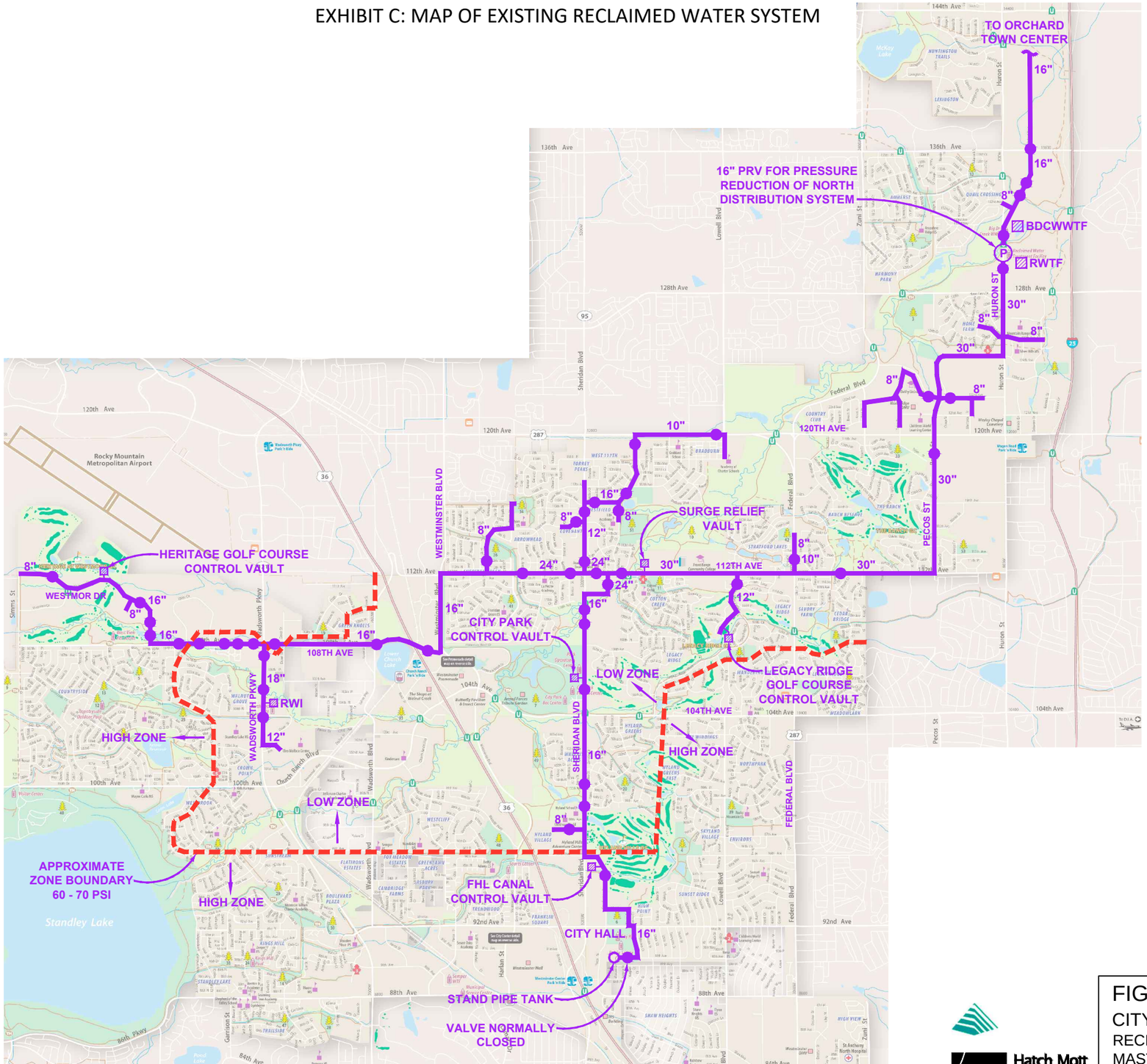
City of Westminster
Reclaimed Water Feasibility Evaluation and Implementation Plan
Proposed Project Budget

			Consultant Hours					Consultant Fee					Expenses			Total Consultant Hours	Total Fee
Task	Subtask	Description	Project Principal	Project Manager	Project Engineer	Clerical	QA/QC	Project Principal	Project Manager	Project Engineer	Clerical	QA/QC	Reimbursables	ASR Sub	Financial Sub		
A		**Compile and Review Existing Data and Information**	**6**	**6**	**20**	**1**	**0**	**$1,890**	**$1,260**	**$3,000**	**$115**	**$0**				**33**	**$6,265**
	1	Prepare information request	0	2	2	0	0	$0	$420	$300	$0	$0				4	$720
	2	Compile and review data	6	4	18	1	0	$1,890	$840	$2,700	$115	$0				29	$5,545
B		**Reclaimed Water Quantity Evaluation**	**8**	**14**	**96**	**0**	**4**	**$2,520**	**$2,940**	**$14,400**	**$0**	**$1,260**				**122**	**$21,120**
	1	Review historical quantity data	2	4	20	0	2	$630	$840	$3,000	$0	$630				28	$5,100
	2	Develop flow accounting model	2	4	44	0	0	$630	$840	$6,600	$0	$0				50	$8,070
	3	Determine impact of conservation	2	4	20	0	0	$630	$840	$3,000	$0	$0				26	$4,470
	4	Develop future supply projections	2	2	12	0	2	$630	$420	$1,800	$0	$630				18	$3,480
C		**Reclaimed Water Customers**	**17**	**19**	**136**	**1**	**6**	**$5,355**	**$3,990**	**$20,400**	**$115**	**$1,890**	**$2,585**			**179**	**$34,335**
	1	Collect and review historical data	2	2	20	0	2	$630	$420	$3,000	$0	$630				26	$4,680
	2	Identify existing customers for removal	1	1	16	0	0	$315	$210	$2,400	$0	$0				18	$2,925
	3	Identify potential new customers and usage	1	1	40	0	2	$315	$210	$6,000	$0	$630				44	$7,155
	4	Workshop: prioritize and rank customers	12	12	4	1	0	$3,780	$2,520	$600	$115	$0				29	$7,015
	5	GIS figure	0	0	4	0	0	$0	$0	$600	$0	$0				4	$600
	6	Develop OPCCs for connecting customers	1	2	36	0	2	$315	$420	$5,400	$0	$630				41	$6,765
	7	Review Municipal Code	0	1	16	0	0	$0	$210	$2,400	$0	$0				17	$2,610
D		**Reclaimed Water Distribution System Assessment**	**20**	**33**	**258**	**1**	**5**	**$6,300**	**$6,930**	**$38,700**	**$115**	**$1,575**	**$2,585**			**317**	**$56,205**
	1	Review existing hydraulic model	0	1	22	0	0	$0	$210	$3,300	$0	$0				23	$3,510
	2	Update hydraulic model	2	4	52	0	2	$630	$840	$7,800	$0	$630				60	$9,900
	3	Distribution system workshop	12	12	2	1	0	$3,780	$2,520	$300	$115	$0				27	$6,715
	4	Review asset mgmt database	2	4	72	0	0	$630	$840	$10,800	$0	$0				78	$12,270
	5	Identify potential modifications	2	6	50	0	2	$630	$1,260	$7,500	$0	$630				60	$10,020
	6	Develop additional model scenarios	0	2	36	0	1	$0	$420	$5,400	$0	$315				39	$6,135
	7	Summarize regulatory compliance issues	2	4	24	0	0	$630	$840	$3,600	$0	$0				30	$5,070
E		**Storage Evaluation**	**7**	**14**	**102**	**0**	**2**	**$2,205**	**$2,940**	**$15,300**	**$0**	**$630**		**$103,500**		**125**	**$124,575**
	1	Develop additional storage options	4	8	50	0	0	$1,260	$1,680	$7,500	$0	$0				62	$10,440
	2	Develop OPCCs	2	4	32	0	2	$630	$840	$4,800	$0	$630				40	$6,900
	3	Model potential storage options	1	2	20	0	0	$315	$420	$3,000	$0	$0				23	$3,735
F		**Potable Reuse**	**22**	**27**	**166**	**1**	**11**	**$6,930**	**$5,670**	**$24,900**	**$115**	**$3,465**	**$2,585**			**227**	**$43,665**
	1	Review regulations and guidelines	1	1	16	0	0	$315	$210	$2,400	$0	$0				18	$2,925
	2	Review of ASR	2	2	2	0	0	$630	$420	$300	$0	$0				6	$1,350
	3	Develop potable reuse alternatives	4	6	64	0	4	$1,260	$1,260	$9,600	$0	$1,260				78	$13,380
	4	Planning level OPCCs	2	4	36	0	4	$630	$840	$5,400	$0	$1,260				46	$8,130
	5	Conceptual designs	2	2	20	0	0	$630	$420	$3,000	$0	$0				24	$4,050
	6	Waste-Stream Discharge Evaluation	1	2	24	0	2	$315	$420	$3,600	$0	$630				29	$4,965
	7	Workshop: Prioritization and Screening	10	10	4	1	1	$3,150	$2,100	$600	$115	$315				26	$6,280
G		**Financial Sustainability Evaluation**	**16**	**18**	**44**	**0**	**3**	**$5,040**	**$3,780**	**$6,600**	**$0**	**$945**	**$2,585**		**$34,500**	**81**	**$53,450**
	1	Financial Evaluation	2	2	2	0	1	$630	$420	$300	$0	$315				7	$1,665
	2	Financial Model	2	2	2	0	1	$630	$420	$300	$0	$315				7	$1,665
	3	Financial Sustainability Workshop	10	10	0	0	0	$3,150	$2,100	$0	$0	$0				20	$5,250
	4	Staffing, operating and CIP plans	2	4	40	0	1	$630	$840	$6,000	$0	$315				47	$7,785
H		**Implementation Plan**	**4**	**6**	**40**	**0**	**4**	**$1,260**	**$1,260**	**$6,000**	**$0**	**$1,260**				**54**	**$9,780**
	1	Develop implementation plan and phasing	4	6	40	0	4	$1,260	$1,260	$6,000	$0	$1,260				54	$9,780
I		**Report**	**20**	**30**	**160**	**11**	**14**	**$6,300**	**$6,300**	**$24,000**	**$1,265**	**$4,410**	**$2,585**	**$11,500**		**235**	**$56,360**
	1	Draft report	8	16	132	4	12	$2,520	$3,360	$19,800	$460	$3,780				172	$29,920
	2	Report review meeting	10	10	4	1	0	$3,150	$2,100	$600	$115	$0				25	$5,965
	3	Final report	2	4	24	6	2	$630	$840	$3,600	$690	$630				38	$6,390
J		**Project Coordination and Additional Meetings**	**50**	**158**	**44**	**11**	**4**	**$15,750**	**$33,180**	**$6,600**	**$1,265**	**$1,260**	**$10,340**			**267**	**$68,395**
	1	Project Management and Coordination	16	120	24	8	0	$5,040	$25,200	$3,600	$920	$0				168	$34,760
	2	0% QC and Meeting Prep	4	8	8	1	4	$1,260	$1,680	$1,200	$115	$1,260				25	$5,515
	3	Kickoff Meeting	10	10	4	1	0	$3,150	$2,100	$600	$115	$0				25	$5,965
	4	Additional Meetings (2)	20	20	8	1	0	$6,300	$4,200	$1,200	$115	$0				49	$11,815
		Total	**170**	**325**	**1066**	**26**	**53**	**$53,550**	**$68,250**	**$159,900**	**$2,990**	**$16,695**	**$23,265**	**$115,000**	**$34,500**	**1640**	**$474,150**

Assumed Rates

Project Principal	$315
Project Manager	$210
Project Engineer	$150
Clerical	$115
QA/QC	$315

EXHIBIT C: MAP OF EXISTING RECLAIMED WATER SYSTEM



LEGEND

- DISTRIBUTION LINE
- MAIN LINE VALVE
- PRV
- RECLAIMED SYSTEM FACILITY
- HIGH ZONE BOUNDARY

2000 0 2000 4000

SCALE IN FEET

Hatch Mott MacDonald

FIGURE 2 - 2

CITY OF WESTMINSTER
RECLAIMED WATER SYSTEM
MASTER PLAN UPDATE
EXISTING INFRASTRUCTURE