



Council Study Session Agenda

ASHLAND CITY COUNCIL
STUDY SESSION AGENDA
Monday, December 4, 2023
Council Chambers, 1175 E Main Street

**View on Channel 9 or Channels 180 and 181 (Charter Communications)
or live stream via rvtv.sou.edu select RVTV Prime.**

HELD HYBRID (In-Person or Zoom Meeting Access)

Public testimony will be accepted for both general public forum items and agenda items.

**Please complete the online Public Testimony Form (ashland.or.us/Council),
for WRITTEN and ELECTRONIC testimony only.** Indicate on the Public Testimony Form if you wish to
provide WRITTEN testimony, or if you wish to speak ELECTRONICALLY during the meeting.
Please submit your testimony no later than 10 a.m. the day of the meeting.

5:30 p.m. Study Session

1. **Public Input** (15 minutes – Public input or comment on City business not included on the agenda)
2. **Water Utility Rates Overview**
3. **Electric Master Plan Overview**
4. **Adjournment of Study Session**

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the City Manager's office at 541.488.6002 (TTY phone number 1.800.735.2900). Notification 72 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to the meeting (28 CFR 35.102-35.104 ADA Title I).





Council Study Session

December 4, 2023

Agenda Item	Electric Master Plan Overview			
From	Tom McBartlett	Electric Director		
Contact	<u>Thomas.mcbartlett@ashland.or.us</u> 541-488-5357			
Item Type	Requested by Council ☒ Update ☐ Request for Direction ☐ Presentation ☒ Consent ☐ Public Hearing ☐ New Business ☐ Old Business ☐			

SUMMARY

At the August 1, 2023, City Council meeting, Council approved a contract with Stoddard Power Systems to complete an Electric Master plan for the Electric Utility. As part of that approval, the Council requested a study session with Stoddard to discuss Council's vision and expectations for the plan.

POLICIES, PLANS & GOALS SUPPORTED

- Quality infrastructure and facilities through timely maintenance and investment
- Implementation of the Climate and Energy Action Plan

BACKGROUND AND ADDITIONAL INFORMATION

The team at Stoddard has been working on the plan for a few months now. This study session should provide an opportunity for them to brief the Council and staff on progress to date and offer Council the opportunity to give input on items Council would like to see addressed.

FISCAL IMPACTS

There are no fiscal impacts currently.

The original contract approval in August was for \$78,159.

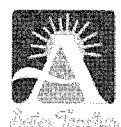
DISCUSSION QUESTIONS

1. How far along is the process, 30%, 50%, etc.?
2. Have there been any glaring issues found or needs for immediate capital investment?

SUGGESTED NEXT STEPS

REFERENCES & ATTACHMENTS

August 1, 2023, Council packet materials for this item





Council Business Meeting

August 1, 2023

Agenda Item	Contract for an Electric System Master Plan with Stoddard Power Systems, LLC		
From	Thomas McBartlett III	Electric Utility Director	
Contact	Thomas.mcbartlett@ashland.or.us 541-488-5357		
Item Type	Requested by Council ☐ Update ☐ Request for Approval ☒ Presentation ☐		

SUMMARY

Approval is being requested to enter into a contract for an **Electric System Master Plan** at a cost of \$78,159.00. A formal competitive sealed proposal (Request for Proposal) is the required sourcing method for an acquisition of this type (Personal Services) greater than \$75,000.00. The City's intent is to award a contract to the highest ranked proposer, Stoddard Power Systems, LLC.

POLICIES, PLANS & GOALS SUPPORTED

- Climate Energy Action Plan execution
- Quality infrastructure and facilities through timely maintenance and community investment

BACKGROUND AND ADDITIONAL INFORMATION

A formal RFP (Request for Proposal) was facilitated, and the City received three (3) proposals in response to the RFP. The proposals were evaluated in accordance with the evaluation process and criteria outlined in the RFP and the City's intent is to award a public contract to the highest ranked proposer.

In accordance with AMC 2.50.070(2), this contract exceeds delegated authority and thus requires Council approval. In accordance with AMC 2.50.090 and AMC 2.50.120(A), a formal Competitive Sealed Proposal (Request for Proposal) is required to acquire personal services exceeding \$75,000.00.

Please refer to the attached solicitation – Request for Proposals – for the scope of services.

FISCAL IMPACTS

The Electric Utility Department has funds budgeted for this project.

DISCUSSION QUESTIONS

SUGGESTED NEXT STEPS

Staff recommends award of a contract for the Electric System Master Plan services to the highest ranked proposer, Stoddard Power Systems, LLC.

REFERENCES & ATTACHMENTS

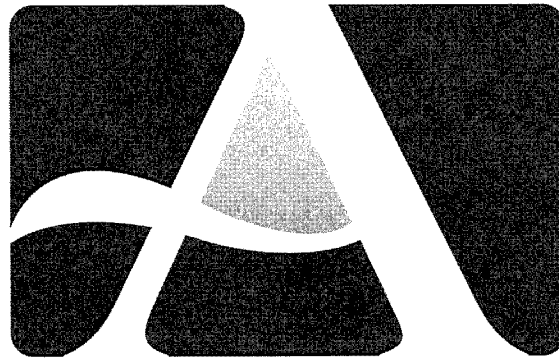
Evaluation Summary
Request for Proposal – Electric System Master Plan
Stoddard Proposal



City of Ashland
Request for Proposal
ELECTRIC SYSTEM MASTER PLAN
Evaluation Summary
July 7, 2023

Evaluation Criteria	Points	ELCON ASSOCIATES INC.			ENERNEX, LLC			STODDARD POWER SYSTEMS, LLC		
		#1	#2	#3	#1	#2	#3	#1	#2	#3
Letter of Introduction, Table of Contents and Proposal Submission Form (Exhibit A)	5	5	5	5	5	5	5	5	5	5
Qualifications and Experience	30	25	20	25	20	20	20	28	30	30
Task List & Timeline	25	25	25	25	15	10	10	25	25	25
References	10	8	10	7	5	5	9	10	10	10
Contractual Terms and Conditions	5	5	5	5	5	5	5	5	5	5
SUBTOTAL	75	68	65	67	50	45	49	73	75	75
Cost Proposal	25	25	25	25	2.61	2.61	2.61	21.1	21.1	21.1
TOTAL	100	93	90	92	52.61	47.61	51.61	94.1	96.1	96.1

Cost Proposals				
Elcon Associates, Inc.	\$65,950.00	\$65,950.00	100%	25 Points
Enernex, LLC	\$632,314.00	\$65,950.00 / \$632,314.00	10.43%	2.61 Points
Stoddard Power Systems, LLC	\$78,159.00	\$65,950.00 / \$78,159.00	84.38%	21.1 Points



**CITY OF
ASHLAND**

Request for Proposals

**ELECTRIC SYSTEM
MASTER PLAN**

Date of Release: May 24, 2023

Proposals are due by: 2:00:00 PM (PST), Tuesday, June 27, 2023

Contracting Agency:
Sole Point of Contact:
Title:
Address:

Telephone:
Fax:
Email:

City of Ashland
Kari Olson
Purchasing Specialist
City of Ashland
90 N. Mountain Avenue
Ashland, OR 97520
(541) 488-5354
(541) 488-5320
kari.olson@ashland.or.us

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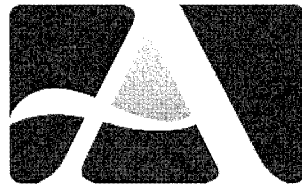
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EXHIBIT A – PROPOSAL SUBMISSION FORM

EXHIBIT B – CERTIFICATE OF COMPLIANCE

EXHIBIT C – PERSONAL SERVICES AGREEMENT

PUBLIC NOTICE:



**CITY OF
ASHLAND**

Request for Proposals

Electric System Master Plan

Proposals are due by 2:00:00 PM (PST), Tuesday, June 27, 2023

The City of Ashland is requesting written proposals from qualified engineering firms for professional services to complete an **Electric System Master Plan** for the City's electric utility.

The City intends to enter into a contract with the highest ranked proposer for the proposed timeline required to complete the Electric System Master Plan.

This Request for Proposal (RFP) is intended to provide prospective proposers with sufficient information to prepare and submit a proposal for consideration by the City.

The REQUEST FOR PROPOSALS is available online at www.ashland.or.us Log on to the City's website, scroll down the home page to **Online City Services** and click on "**Proposals, Bids and Notifications**". Locate the public notice and click on "**REQUEST BID PACKET**" (beneath the public notice). Log into the system and download the solicitation documents. You will need to log into the system each time you would like to download the solicitation documents and any subsequently issued addenda.

In accordance with AMC Section 2.50.080, Competitive sealed proposals may be available online, but applicants will NOT be able to submit their proposals and/or responses online. Proposals must be delivered in hard copy form to the City in accordance with the requirements outlined in the RFP. Individuals that obtain the solicitation materials electronically are responsible for regularly checking for instructions, addenda, and related materials.

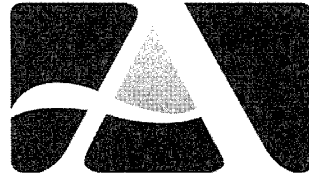
Contract terms, conditions and specifications may be reviewed in the City of Ashland, Purchasing Office, located at 90 N. Mountain, Ashland, Oregon.

Deadline for submitting questions is 5:00:00 PM (PST), Friday, June 16, 2023.

Sealed proposals must be received by **2:00:00 PM (PST), Tuesday, June 27, 2023**, by Kari Olson, Purchasing Specialist in the City of Ashland, Purchasing Office located at 90 N. Mountain Avenue, Ashland OR 97520. The proposals will be opened at **2:00:00 PM (PST), Tuesday, June 27, 2023**, and the City will record and make available the identities of the proposers. Proposals will not be available for inspection until after the evaluation process has been completed and the Notice of Intent to Award has been issued.

Kari Olson
Purchasing Specialist
City of Ashland, Oregon
Kari.olson@ashland.or.us
Tel: 541-488-5354

Published: **May 24, 2023**



CITY OF
ASHLAND

Request for Proposals

Electric System Master Plan

May 24, 2023

ORS 279B.060(2)(c) PURPOSE OF REQUEST FOR PROPOSALS

The City of Ashland is requesting written proposals from qualified engineering firms for professional services to complete an **Electric System Master Plan** for the City's electric utility.

The City intends to enter into a contract with the highest ranked proposer for the proposed timeline required to complete the Electric System Master Plan.

This Request for Proposal (RFP) is intended to provide prospective proposers with sufficient information to prepare and submit a proposal for consideration by the City.

ORS 279B.060(2)(b) SOLE POINT OF CONTACT

Information, correspondence and questions pertaining to this Request for Proposals (RFP) shall **ONLY** be directed to:

Name:	Kari Olson
Title:	Purchasing Specialist
Address:	City of Ashland
	90 N. Mountain Avenue, Ashland, OR 97520
Telephone:	541-488-5354
Fax:	541-488-5320
Email:	<u>Kari.olson@ashland.or.us</u>

This person is the sole point of contact during the entire RFP process including clarification and/or protest of specifications, method of bidding, the evaluation and award process, and/or other questions that may arise. The RFP documents may be reviewed upon request by contacting the designated sole point of contact listed above.

OAR 137-047-0260(2)(a)(C) OPENING DUE DATE AND TIME

Proposals must be received prior to the scheduled opening. The **opening** is scheduled for the following due date and time:

Proposals are due by: **2:00:00 PM (PST), Tuesday, June 27, 2023.**

The proposal must be addressed to the designated sole point of contact and received prior to the due date and time. Proposals received after CLOSING are considered LATE and will NOT be accepted for evaluation. Late proposals will **not** be considered.

OAR 137-047-0260(2)(c)(A) SCHEDULE OF EVENTS

<u>ACTIVITY</u>	<u>DATE</u>
Request for Proposals Released	May 24, 2023
1 st Public Notice	May 24, 2023
Deadline for Submitting Questions and Requests for Additional Information	5:00:00 PM (PST), Friday, June 16, 2023
RFP Protest Period Ends	5:00:00 PM (PST), Monday, April 10, 2023
DUE DATE AND TIME (Note: Proposals <u>must</u> be received prior to the due date and time.)	2:00:00 PM (PST), Tuesday, June 27, 2023 Location: City of Ashland, Purchasing Office 90 N. Mountain, Ashland, OR 97520
Evaluation Process	June 28 – July 6, 2023
Contract Recommendation	Upon completion of evaluation process
Notice of Intent to Award Announcement	(7) Days prior to executing contract
Award Protest Period Ends	(7) Days after Notice of Intent to Award is released
Contract Recommendation Presented to City Council for Final Approval	July 18, 2023
Contract Award	Upon Council Approval and (7) Days after the Notice of Intent to Award Announcement
Services intended to begin	Upon receiving a fully executed contract

NOTE: This is a tentative schedule and is provided as a courtesy to potential proposers. The actual schedule may vary from that provided without notice to potential proposers. Any changes made to the closing date of the RFP will be made in the form of an addendum and mailed to all potential proposers who have received RFP documents.

QUESTIONS AND REQUESTS FOR ADDITIONAL INFORMATION:

All potential proposers are encouraged to ask questions and request additional information that will aid in the clarification of the RFP requirements. Questions and requests for information will be promptly considered, and written responses will be provided in the form of a written addendum and posted on the City's website.

All inquiries, whether relating to the RFP process, administration, deadline or method of award, or to the intent or technical aspects of the RFP must:

- Be delivered **via email** to the **Sole Point of Contact** identified on page 4 of the RFP
- Reference the name of the RFP
- Identify the proposer's name and contact information
- Be sent by an authorized representative
- Refer to the specific area of the RFP being questioned (i.e., page, section and paragraph number); and
- Be received by the due date and time for Questions/Requests for Clarification identified in the schedule

OAR 137-047-0260(2)(a)(F) Addenda The provisions of this RFP cannot be modified by oral interpretations or statements. Proposers are cautioned not to make any assumptions as to the implied meaning or intent of any part of the RFP. Proposers should request clarification. If inquiries or comments by proposers raise issues that require clarification by the City, or the City revises any part of this RFP, addenda will be provided in the form of a written addendum and posted on the City's website. Receipt of an addendum must be acknowledged by signing and returning it with the proposal. Addenda will be issued within a reasonable time to allow prospective proposers to consider the addenda in preparing their proposals. Unless a different deadline is set forth in the addendum, a proposer may submit a request for change or protest by the close of the next business day after the issuance of the addendum, or up to the

last day the RFP Protest Period ends, whichever date is later. If the date established in the previous sentence falls after the RFP Protest Period ends, the City will consider a request for change or protest to the addendum only. Addenda shall not be issued less than 72 hours before the closing unless the addendum also extends the closing.

ORS 279B.405 Protest Solicitation Process A prospective proposer for a public contract solicited under ORS 279B.055, 279B.060 or 279B.085 may file a protest with the City if the prospective proposer believes that the procurement process is contrary to law or that a solicitation document is unnecessarily restrictive, is legally flawed or improperly specifies a brand name. If a prospective proposer fails to timely file such a protest, the prospective proposer may not challenge the contract on grounds under this subsection in any future legal or administrative proceeding. If the protest is received at least 10 days prior to bid closing and meets the requirements of ORS 279B.405, the City shall consider the protest and issue a decision in writing. Otherwise, the City shall promptly notify the prospective proposer that the protest is untimely or that the protest failed to meet the requirements and give the reasons for the failure. The City shall issue a decision on the protest no fewer than three business days before proposals are due, unless a written determination is made by the City that circumstances exist that justify a shorter time limit.

Protests must:

- Be delivered to the **Sole Point of Contact** identified on page 4 via email, facsimile, hard copy
- Reference the name of the RFP
- Identify prospective proposer's name and contact information
- Be sent by an authorized representative
- State the Reason for the protest, including:
 - the grounds that demonstrate how the procurement process is contrary to law, unnecessarily restrictive, legally flawed, or improperly specifies a brand name; and
 - evidence or documentation that supports the grounds on which the protest is based
- State the proposed changes to the RFP provisions or other relief sought
- Protests to the RFP must be received by the due date and time identified in the schedule
- Protests to addenda must be received by the close of the next business day after the issuance of the addendum, or up to the last day the RFP Protest Period ends, whichever date is later.

OAR 137-047-0440 Pre-Closing Modification or Withdrawal of Offers A proposer may modify its proposal in writing prior to the closing in accordance with OAR 137-047-0400, OAR 137-047-0410 and OAR 137-047-0440. Any modification must include the proposer's statement that the modification amends and supersedes the prior proposal. A proposer in accordance with OAR 137-047-0440 may withdraw its proposal by written notice submitted on proposer's letterhead, signed by authorized representative of the proposer, and delivered to the individual and location specified in the solicitation document prior to closing.

OAR 137-047-0460 Late Offers, Late Withdrawals and Late Modifications

Any proposal received after closing is late. A proposer's request for withdrawal or modification of a proposal received after closing is late. An Agency shall not consider late proposals, withdrawals or modifications except as permitted in OAR 137-047-0470 or 137-047-0262.

Proposal Acceptance Proposals that do not address all areas requested by this RFP may be deemed non-responsive and may not be considered for any possible contract awarded resulting from this RFP.

ORS 279B.060(2)(e) Cancel, Reject or Delay Procurement The City of Ashland may cancel the procurement, reject in whole or in part any or all proposals, or suspend or delay the procurement in accordance with ORS 279B.100 when it's in the best interest of the City of Ashland as determined by the City of Ashland. In no event shall the City of Ashland have any liability for the cancellation, rejection, or

suspension of a solicitation or award. The proposer assumes the sole risk and responsibility of all expenses connected with the preparation of its proposal.

Collusion By submitting a proposal, proposer certifies that no officer, agent, or employee of the City of Ashland has a monetary interest in this proposal; that the proposal is made in good faith without fraud, collusion, or connection of any kind with any other proposer and that the proposer is competing solely in its own behalf without connection with, or obligation to, any undisclosed person or company.

Disputes In case of any doubt or differences of opinions as to the items or services to be furnished hereunder, or the interpretation of the provisions of the RFP, the decision of the City of Ashland shall be final and binding upon all parties.

Clarification of Responses The City of Ashland reserves the right to request clarification of any item in any proposal, or to request additional information necessary to properly evaluate a proposal.

References The City of Ashland reserves the right to investigate any and all references and the past performance information provided in the proposal with respect to proposer's successful performance of similar projects, compliance with specifications and contractual obligations, completion or delivery of a project on schedule, and lawful payment of employees and workers.

Recyclable and Recycled Products Contractors shall use recyclable products to the maximum extent economically feasible in the performance of the contract work set forth in this RFP.

ORS 279A.125 The City shall give preference to goods that are certified to be made from recycled materials if the recycled product is available, meets applicable standards, can be substituted for a comparable non-recycled product; and the recycled products costs do not exceed the costs of non-recycled products by more than five percent, or a higher percentage if a written determination is made by the City.

ORS 282.210 All printing, binding and stationery work done for the City shall be performed within the State of Oregon.

ORS 279B.060(2)(g) If required under ORS 468A.710, the contractor or subcontractor is required to possess an asbestos abatement license.

ORS 279B.060(6)(a) Opening Procedures Notwithstanding ORS 192.410 to 192.505, proposals may be opened in a manner to avoid disclosure of contents to competing proposers during, when applicable, the process of negotiation, but the City of Ashland shall record and make available the identity of all proposers as part of the City's public records after the proposals are opened.

Notwithstanding ORS 192.410 to 192.505, proposals are not required to be open for public inspection until after the notice of intent to award a contract is issued. The fact that proposals are opened at a meeting, as defined in ORS 192.610, does not make the contents of the proposals subject to disclosure, regardless of whether the public body opening the proposals fails to give notice of or provide for an executive session for the purpose of opening proposals.

OAR 137-047-0260(2)(a)(E) Certification of Nondiscrimination Proposer to certify that the proposer has not discriminated and will not discriminate, in violation of ORS 279A.110(1), against a minority, women or emerging small business enterprise certified under ORS 200.055 or against a business enterprise that is owned or controlled by or that employs a disabled veteran as defined in ORS 408.225 in obtaining a required subcontract. The Certificate of Compliance attached as **Exhibit B**, is required to be

signed and included with your proposal.

ORS 279B.060(6)(b) Proprietary Information (Trade Secrets) Notwithstanding any requirement to make proposals open to public inspection after the City of Ashland's issuance of a notice of intent to award a contract, the City of Ashland may withhold from disclosure to the public materials included in a proposal that are exempt or conditionally exempt from disclosure under ORS 192.501 or 192.502.

All proposals are public record and are subject to public inspection after Agency issues the Notice of the Intent to Award. If a proposer believes that any portion of its proposal contains any information that is a trade secret under ORS Chapter 192.501(2) or otherwise is exempt from disclosure under the Oregon Public Records Law (ORS 192.410 through 192.505).

The scope of services and cost information generally is not considered a trade secret under Oregon Public Records Law (ORS 192.410 through 192.505) and identifying the proposal, in whole, as exempt from disclosure is not acceptable. Agency advises each proposer to consult with its own legal counsel regarding disclosure issues.

If proposer fails to identify the portions of the proposal that proposer claims are exempt from disclosure, Proposer has waived any future claim of non-disclosure of that information.

If applicable, the proposer shall submit a **redacted version of its proposal** if the proposal being submitted in response to this RFP contains trade secrets.

ORS 279B.060(13) Notice of Intent to Award a Public Contract The City of Ashland shall provide written notice of its intent to award to all proposers pursuant to ORS 279B.135 and OAR 137-047-0610 at least seven (7) days before the award of the contract, unless the City determines that circumstances justify prompt execution of the contract, in which case the City may provide a shorter notice period.

ORS 279B.060(14) Contract Award The City of Ashland shall award the contract to the responsible proposer whose proposal the City of Ashland determines in writing to be the most advantageous to the City of Ashland based on the evaluation process and evaluation factors described in this Request for Proposals, and any applicable preferences described in ORS 279A.120, ORS 279A.125 and ORS 279A.128 and, when applicable, the outcome of any negotiations authorized by this Request for Proposals. Other factors may not be used in the evaluation. In addition, any other public agency wishing to use the resulting contract may be authorized by mutual consent of the City of Ashland and the contractor.

ORS 279B.410 Protest of Contract Award A proposer may protest the award of a public contract or notice of intent to award a public contract if the proposer is adversely affected because the proposer would be eligible to be awarded the public contract in the event that the protest were successful. The written protest shall specify the reasons for the protest pursuant to ORS 279B.410(1)(b) and be delivered to the sole point of contact named in the RFP within seven days after issuance of the Notice of Intent to Award a contract. The City shall consider and respond in writing to a protest in a timely manner.

ORS 279B.060(2)(h) Contractual Terms and Conditions The proposer selected by the City of Ashland will be expected to enter into a written contract in the form attached to this RFP. This RFP and the contents of the proposal of the successful proposer will become contractual obligations if a contract is executed. The proposal should indicate acceptance of the City of Ashland's contract provisions or suggest reasonable alternatives that do not substantially impair the City of Ashland's rights under the contract. The proposer may also propose contractual terms and conditions that relate to subject matter reasonably identified in this Request for Proposals. The City of Ashland reserves the right to negotiate the contractual

terms and conditions proposed as alternatives by the proposer. If inclusion of any of the City of Ashland's contract provisions will result in higher costs for the services, such costs must be specifically identified in the proposal. Unconditional refusal to accept the contract provisions proposed by the City of Ashland without offering acceptable alternatives may result in the disqualification of the proposal.

Insurance Certificates The Contractor will be required to provide and maintain ALL required insurance certificates, and provide current Certificates of Insurance, including the City of Ashland endorsed as the additional insured, to the City prior to any lapse of insurance coverage.

Additional Terms

The City of Ashland reserves the right to waive irregularities or deficiencies in a proposal if the City of Ashland determines that waiver is in the best interest of the City of Ashland.

The City of Ashland may request supplemental written information from a proposer concerning the proposer's ability to perform the services. If a proposer fails to provide supplemental information within the time stated in the request, the City of Ashland may refuse to consider the proposer's proposal.

The City of Ashland may request an interview with any proposer. If a proposal is unclear, or appears inadequate, the proposer may be given an opportunity in the interview to explain how the proposal complies with the RFP.

The City of Ashland reserves the right to make such investigation it deems appropriate to determine whether a proposer is qualified to provide the services. If a proposer fails to cooperate with an investigation, or if a proposer provides false, misleading or incomplete information, the City of Ashland may refuse to consider the proposer's proposal.

In cases of doubt or differences of opinion concerning the interpretation of this RFP, the City of Ashland reserves the exclusive right to determine the intent, purpose and meaning of any provision in this RFP.

SCOPE OF SERVICES

The City of Ashland is requesting written proposals from qualified engineering firms for professional services to complete an **Electric System Master Plan** for the City's electric utility.

The following is a general **description of the scope of services** for the City's Electric System Master Plan. A more detailed scope of services may be developed with the highest ranked proposer.

Information the City will provide is as follows:

- Known urban growth information.
- BPA load data
- Available transformer data
- Available pole data
- Available underground cable data
- Available meter and SCADA data
- Available DER data
- Relevant technical information from the City's electrical engineering firm

Electric System Master Plan responsibilities and deliverables to be provided are as follows:

1. Load forecasting for future growth needs
2. Seasonal load shift data to identify areas of concern
3. Major electrical infrastructure replacement schedule
4. Transformer inventory review and replacement schedule
5. Pole inventory review and replacement schedule
6. Underground cable inventory review and replacement schedule
7. Electric meter system replacement schedule and future system advisory
8. System situational awareness advisory and monitoring to maintain optimal operations.
9. Opportunities and barriers for adding renewables (e.g., solar, wind, hydro, etc.).
10. Evaluate system readiness for moderate to high adoption of EVs (i.e., residential and commercial electric vehicle charging stations) and fuel switching (e.g., gas appliances to electric appliances).
11. Projected rate impacts for all capital improvement recommendations
12. Recommendations for integration of the City's **Climate and Energy Action Plan** in the Electric System Master Plan <https://ashlandor.org/climate-energy/climate-plan/>
13. Recommendations for integration of the City's **Wildfire Mitigation Plan** in the Electric System Master Plan <https://edocs.puc.state.or.us/efdocs/HAQ/ro14haq91017.pdf>

Close-out tasks to be provided as follows:

1. Prepare draft of Electric System Master Plan for City staff review.
 - Email draft to the Electric Director, Thomas McBartlett III.
Thomas.mcbartlett@ashland.or.us
 - The draft will be reviewed internally by City staff.
 - Additional information and/or revisions and/or services may be requested for the development of the Electric System Master Plan at this time, which may require an amendment (i.e., increase in SOW and compensation) to the contract.
 - Prepare final draft of the Electric System Master Plan.
2. Schedule and facilitate an in-person review of the final draft of the Electric System Master Plan with the City's Electric Director, Thomas McBartlett III.
3. Present the final draft of the Electric System Master Plan to the City Council. Assist City staff, as needed, to obtain the City Council's approval and adoption of the proposed Electric System Master Plan.

PROPOSAL CONTENTS

Proposals shall provide a straightforward, concise description of the proposer's capabilities to satisfy the requirements of the RFP. Emphasis should be on completeness and clarity of content. Submissions of technical literature, display charts, or other supplemental materials are the responsibility and within the discretion of the proposer. The proposal must contain and be organized in accordance with the following section titled Proposal Contents. The proposer assumes the sole risk and responsibility of all expenses connected with the preparation of its proposal.

Letter of Introduction / Cover Page

- ✓ Include a letter of introduction addressed to **Thomas McBartlett III, Electric Director** and signed by a person legally authorized to bind the proposer to its proposal. The letter will introduce the company and include the company name, principal contact name, physical address, mailing address, telephone number, fax number and email address. The letter of introduction may also introduce the proposal and summarize the key provisions of the proposal.

Table of Contents

- ✓ Include a clear identification of the material by section and by page number.

Proposal Submission Form

- ✓ Complete and include the **Proposal Submission Form** attached as **Exhibit A**.

Qualifications and Experience

- ✓ Describe your **firm's experience** specifically **creating Electric System Master Plans** for electric utilities. Include the name, location, client entity, and year the Electric System Master Plans were created for each of the utilities.
- ✓ Provide the **names and titles of each person**, their specific qualifications, credentials, level of experience (practical and educational), and number of years' experience that will be assigned to the City's project.
- ✓ Provide **proof of licenses** required to practice in the State of Oregon.

Task List & Timeline

- ✓ Provide the **task list & timeline** being proposed to complete the scope of services.

(Note: The City Council meetings occur on the first and third Tuesdays of each month, excluding holidays.)

References

- ✓ Provide a **minimum of three (3) references** the proposer has/is currently providing these types of professional services. The City reserves the right to verify these references.

Include the following information for each reference:

- Name of agency
- Contact name of individual who can verify your performance.
- Telephone number
- Email address
- Identify the services that were provided for each reference.

Contractual Terms and Conditions

The highest ranked proposer will enter into an agreement with the City of Ashland, Oregon, *in a form substantially similar to* that attached hereto as **Exhibit C**.

- ✓ Indicate acceptance of the City's contract provisions found in the **Personal Services Agreement** attached as **Exhibit C** or suggest reasonable alternatives that do not substantially impair the City's rights under the agreement. Some contract terms and conditions may be negotiable.
- ✓ The **Certificate of Compliance** attached as **Exhibit B**, is required to be signed and included with your proposal.

Cost Proposal

IMPORTANT: The Cost Proposal (fee schedules, including any alternative pricing options) are to be **submitted separately from the technical proposal in a sealed envelope** marked "COST PROPOSAL" per the submission instructions on page 16.

- ✓ Provide **detailed costs by task** and the **total proposed cost** to complete the project. Any and all costs for travel, lodging and meals, will preferably be at federal per diem rates. The City understands if the scope of services is further developed with the successful proposer, there may be additions or deletions to the cost at that time.

Note: For ease in preparing the detailed cost proposal, you are welcome to add the costs and total amount to your Task List & Timeline and submit the version with the associated costs separately with your cost proposal.

- ✓ Provide **hourly rate fee schedule**.

Trade Secrets (if applicable)

- ✓ If applicable, the proposer shall submit a **redacted version of its proposal** if the proposal being submitted in response to this RFP contains trade secrets.

IMPORTANT: Proposals become **public information** after the City releases a Notice of Intent to Award a Public Contract. It is important to submit a **fully redacted copy of the proposal** if it contains confidential trade secrets. A description of services being acquired by the City and the costs associated with those services are NOT considered confidential information.

PROPOSAL SUBMISSION REQUIREMENTS

The **complete written proposal** is to be submitted with **multiple copies** as follows:

TECHNICAL PROPOSAL

- One (1) **original copy** of the complete proposal **SIGNED IN INK**
- Two (2) **additional copies** of the complete proposal

COST PROPOSAL

Cost proposal must be submitted separately from the technical proposal in a **sealed envelope** as follows:

- One (1) **original copy** of the complete proposal **SIGNED IN INK**
- Two (2) **additional copies** of the complete proposal

The complete proposal, including the additional copies, are to be submitted in a single **SEALED ENVELOPE** (or box) labeled as follows and received at the following address:

Kari Olson
Purchasing Specialist
City of Ashland
90 N. Mountain Avenue
Ashland, OR 97520

Contents: Request for Proposal
ELECTRIC SYSTEM MASTER PLAN
Due by: 2:00:00 PM (PST), Tuesday, June 27, 2023

Please note: Late proposals will **not** be considered. **No exceptions.** It is recommended that you request available delivery options for the City of Ashland, Oregon area and verify that your **method of shipment** will arrive prior to the due date and time.

DUE DATE AND TIME:

The proposals must be received at the designated address listed above by **2:00:00 PM (PST), Tuesday, June 27, 2023**. Late proposals will **not** be considered. Faxed or emailed proposals will **not** be considered.

Period of Irrevocability

Proposals will be offers that are irrevocable for a period of sixty (60) days after the time and date proposals are due. Proposals will contain the name, address and telephone number of an individual or individuals with authority to bind the company during the period in which the proposal will be evaluated.

EVALUATION PROCESS

In accordance with ORS 279B.060 (14), The City shall award the contract to the responsible proposer whose proposal the City determines in writing is the most advantageous to the City based on the evaluation process and evaluation criteria described in this RFP, applicable preferences described in ORS 279A.120, 279A.125 and 279A.128, and, when applicable the outcome of any negotiations authorized by the RFP. Other factors may not be used in the evaluation.

An evaluation committee appointed by the City of Ashland will evaluate the proposals based on the evaluation criteria established in this Request for Proposals. Each category will be scored with a number of points, up to the maximum number of points assigned to each category. The greater the number of points assigned to a category, the greater the category's level of importance. Each proposal will be evaluated, scored and then ranked according to the evaluation criteria set forth in this RFP.

After the initial evaluation of the proposals has been completed, the Evaluation Committee may **request clarifications**. Requests for clarifications will be processed via email by the sole point of contact identified on page 4 of this RFP. No additions, deletions or substitutions may be made to proposals that cannot be termed as clarifications. Proposer's responses to questions shall restate the question and provide the requested clarification.

The City of Ashland may reject any proposal not in compliance with all prescribed solicitation procedures and requirements and other applicable laws, and the City may reject for good cause any or all proposals upon the City's findings that it is in the best interest of the City of Ashland.

If only one responsive proposal is received, the City of Ashland reserves the right to negotiate a contract with the sole responsive proposer.

The total points awarded to each proposal will be tabulated and the proposers shall be ranked accordingly. A contract with the proposer deemed to be the highest ranked proposer will then be negotiated. If negotiations with the highest ranked proposer are unsuccessful, the City of Ashland may proceed to the next highest ranked proposer, and so on until a contract is successfully negotiated.

In accordance with OAR 137-047-0260(2)((b)(A)(B)(C), the statement of work will identify the scope of work to be performed under the resulting contract, outline anticipated duties of the contractor and establish the expectations for the contractor's performance of the resulting contract. The agreed upon tasks will also identify respective responsibilities of the contractor and City staff.

In accordance with ORS 279B.060 (16), the City shall obtain the proposer's agreement to perform the scope of work and meet the performance standards set forth in the final negotiated **statement of work**.

The final contract recommendation will then be subject to the approval of the City Council acting as the Local Contract Review Board.

EVALUATION CRITERIA

The proposals will be evaluated according to the following criteria.

<u>EVALUATION CRITERIA</u>	<u>POINTS</u>
Letter of Introduction, Table of Contents and Proposal Submission Form (Exhibit A)	5
Qualifications and Experience	30
Task List & Timeline	25
References	10
Contractual Terms and Conditions	5
SUBTOTAL	75
Cost Proposal	25
TOTAL	100

EXHIBIT A

Request for Proposals ELECTRIC SYSTEM MASTER PLAN May 24, 2023

Proposal Submission Form

The undersigned proposer submits this proposal in response to the City's Request for Proposals (RFP) for **Electric System Master Plan**, released on May 24, 2023. The proposer warrants that the proposer has carefully reviewed the RFP and that this proposal represents the proposer's full response to the requirements described in the RFP. The proposer further warrants that if this proposal is accepted, the proposer will contract with the City, agrees to the terms and conditions found in the attached contract and RFP or has submitted terms and conditions acceptable to the City, and will provide all necessary labor, materials, equipment, and other means required to complete the work in accordance with the requirements of the RFP and contract documents.

The proposer hereby acknowledges the requirement to carry or indicates the ability to obtain the insurance required in the contract. Indicate in the affirmative by initialing here: _____

The proposer hereby acknowledges receipt of Addendum Nos. ____, ____, ____, ____, ____ to this RFP.

Full legal name of company:	
Principle owner's name:	
Business Address:	
State and location of company headquarters:	
Year business established:	
Telephone Number:	
Fax Number:	
Email Address:	
Authorized Signature:	
Printed/Typed Name:	
Title:	
Date:	

EXHIBIT B

Certificate of Compliance

Compliance with Oregon Tax Laws:

In compliance with OAR 137-047-0260(2)(e), I hereby attest or affirm under penalty of perjury: That I am authorized to act on behalf of the proposer in this matter, that I have authority and knowledge regarding the payment of taxes, and that contractor is, to the best of my knowledge, not in violation of any Oregon Tax Laws, as defined in ORS 305.380.

Compliance with Nondiscrimination Laws:

In compliance with ORS 279A.110(4), OAR 137-046-0210(2) and OAR 137-047-0260(2)(a)(E), I hereby attest or affirm under penalty of perjury that I am authorized to act on behalf of proposer in this matter, and to the best of my knowledge the proposer has not discriminated and will not discriminate, in violation of ORS 279A.110(1), against a minority, women or emerging small business enterprise certified under ORS 200.055 or against a business enterprise that is owned or controlled by or that employs a disabled veteran as defined in ORS 408.225 in obtaining a required subcontract.

Corporate Officer:

By: _____
Signature

Print Name

Title: _____

Date: _____

EXHIBIT C
PERSONAL SERVICES AGREEMENT

CITY OF ASHLAND 20 East Main Street Ashland, Oregon 97520 Telephone: 541/488-XXXX Fax: 541/552-XXXX	CONSULTANT: CONTACT: ADDRESS: TELEPHONE:
--	---

This Personal Services Agreement (hereinafter "Agreement") is entered into by and between the City of Ashland, an Oregon municipal corporation (hereinafter "City") and XXXXXXXXXX, a domestic professional corporation or limited liability company ("hereinafter "Consultant"), for (description of services to be provided.).

NOW THEREFORE, in consideration of the mutual covenants contained herein, the City and Consultant hereby agree as follows:

- Effective Date and Duration:** This Agreement shall become effective on the date of execution on behalf of the City, as set forth below (the "Effective Date"), and unless sooner terminated as specifically provided herein, shall terminate upon the City's affirmative acceptance of Consultant's Work as complete and Consultant's acceptance of the City's final payment therefore, but not later than XXXXXXXXXX.
- Scope of Work:** Consultant will provide (description of services to be provided) as more fully set forth in the Consultant's Proposal dated XXXXXXXXXX, which is attached hereto as "Exhibit X" and incorporated herein by this reference. Consultant's services are collectively referred to in this Agreement as the "Work."
- Compensation:** City shall pay Consultant the sum of \$XXXXXXX (this amount may be an hourly rate OR a lump sum - write out amount in long form here, e.g., two hundred thousand and eighty-five dollars) as full compensation for Consultant's performance of all Work under this Agreement. In no event shall Consultant's total of all compensation and reimbursement under this Agreement exceed the sum of \$XXXXXXXXXX (write out amount in long form here) without the express, written approval from the City official whose signature appears below, or such official's successor in office. Payments shall be made within thirty (30) days of the date of receipt by the City of Consultant's invoice. Should this Agreement be terminated prior to completion of all Work, payments will be made for any phase of the Work completed and accepted as of the date of termination.
- Supporting Documents/Conflicting Provisions:** This Agreement and any exhibits or other supporting documents shall be construed to be mutually complementary and supplementary wherever possible. In the event of a conflict which cannot be so resolved, the provisions of this Agreement itself shall control over any conflicting provisions in any of the exhibits or supporting documents.

5. **All Costs Borne by Consultant:** Consultant shall, at its own risk, perform the Work described above and, unless otherwise specified in this Agreement, furnish all labor, equipment, and materials required for the proper performance of such Work.
6. **Qualified Work:** Consultant has represented, and by entering into this Agreement now represents, that all personnel assigned to the Work to be performed under this Agreement are fully qualified to perform the services to which they will be assigned in a skilled manner and, if required to be registered, licensed, or bonded by the State of Oregon, are so registered, licensed, or bonded.
7. **Ownership of Work/Documents:** All Work, work product, or other documents produced in furtherance of this Agreement belong to the City, and any copyright, patent, trademark proprietary or any other protected intellectual property right shall vest in and is hereby assigned to the City.
8. **Statutory Requirements:** The following laws of the State of Oregon are hereby incorporated by reference into this Agreement: ORS 279B.220, 279B.230 and 279B.235.
9. **Data Safeguards:**
 - a. Consultant shall access, store, and use Confidential Information solely for the purpose of providing the Work required by this Contract.
 - b. Consultant shall maintain physical, technical, and administrative safeguards to protect Confidential Information against unauthorized access.
 - c. Contractor shall not disclose Confidential Information to any third parties other than Contractor's employees or approved subcontractors who have a legitimate need to access such Confidential Information and solely for the purpose of providing the Work, and only if such third parties are bound by confidentially and non-disclosure provisions no less restrictive than those set out in this Contract, including compliance with all applicable laws and regulations.
10. **Indemnification:** Consultant hereby agrees to defend, indemnify, save, and hold City, its officers, employees, and agents harmless from any and all losses, claims, actions, costs, expenses, judgments, or other damages resulting from injury to any person (including injury resulting in death), or damage (including loss or destruction) to property, of whatsoever nature arising out of or incident to the performance of this Agreement by Consultant (including but not limited to, Consultant's employees, agents, and others designated by Consultant to perform Work or services attendant to this Agreement). However, Consultant shall not be held responsible for any losses, expenses, claims, costs, judgments, or other damages, caused solely by the gross negligence of City.
11. **Termination:**
 - a. Mutual Consent. This Agreement may be terminated at any time by the mutual consent of both parties.
 - b. City's Convenience. This Agreement may be terminated by City at any time upon not less than thirty (30) days' prior written notice delivered by certified mail or in person.
 - c. For Cause. City may terminate or modify this Agreement, in whole or in part, effective upon delivery of written notice to Consultant, or at such later date as may be established by City under any of the following conditions:
 - i. If City funding from federal, state, county or other sources is not obtained and continued at levels sufficient to allow for the purchase of the indicated quantity of services;
 - ii. If federal or state regulations or guidelines are modified, changed, or interpreted in

such a way that the services are no longer allowable or appropriate for purchase under this Agreement or are no longer eligible for the funding proposed for payments authorized by this Agreement; or

- iii. If any license or certificate required by law or regulation to be held by Consultant to provide the services required by this Agreement is for any reason denied, revoked, suspended, or not renewed.

d. For Default or Breach.

- i. Either City or Consultant may terminate this Agreement in the event of a breach of the Agreement by the other. Prior to such termination the party seeking termination shall give to the other party written notice of the breach and its intent to terminate. If the party committing the breach has not entirely cured the breach within fifteen (15) days of the date of the notice, or within such other period as the party giving the notice may authorize in writing, then the Agreement may be terminated at any time thereafter by a written notice of termination by the party giving notice.
- ii. Time is of the essence for Consultant's performance of each and every obligation and duty under this Agreement. City, by written notice to Consultant of default or breach, may at any time terminate the whole or any part of this Agreement if Consultant fails to provide the Work called for by this Agreement within the time specified herein or within any extension thereof.
- iii. The rights and remedies of City provided in this subsection (d) are not exclusive and are in addition to any other rights and remedies provided by law or under this Agreement.

- e. Obligation/Liability of Parties. Termination or modification of this Agreement pursuant to subsections a, b, or c above shall be without prejudice to any obligations or liabilities of either party already accrued prior to such termination or modification. However, upon receiving a notice of termination (regardless of whether such notice is given pursuant to Subsection a, b, c, or d of this section, Consultant shall immediately cease all activities under this Agreement, unless expressly directed otherwise by City in the notice of termination. Further, upon termination, Consultant shall deliver to City all documents, information, works-in-progress and other property that are or would be deliverables had the Agreement been completed. City shall pay Consultant for Work performed prior to the termination date if such Work was performed in accordance with this Agreement.

12. **Independent Contractor Status:** Consultant is an independent contractor and not an employee of the City for any purpose. Consultant shall have the complete responsibility for the performance of this Agreement. Consultant shall provide workers' compensation coverage as required in ORS Chapter 656 for all persons employed to perform Work pursuant to this Agreement. Consultant is a subject employer that will comply with ORS 656.017.

13. **Assignment:** Consultant shall not assign this Agreement or subcontract any portion of the Work without the written consent of City. Any attempted assignment or subcontract without written consent of City shall be void. Consultant shall be fully responsible for the acts or omissions of any assigns or subcontractors and of all persons employed by them, and the approval by City of any assignment or subcontract of the Work shall not create any contractual relation between the assignee or subcontractor and City.

14. **Default.** The Consultant shall be in default of this Agreement if Consultant: commits any material breach or default of any covenant, warranty, certification, or obligation under the Agreement; institutes an action for relief in bankruptcy or has instituted against it an action for insolvency; makes a general assignment for the benefit of creditors; or ceases doing business on a regular basis of the type identified in its obligations under the Agreement; or attempts to assign rights in, or delegate duties under, this Agreement.
15. **Insurance.** Consultant shall, at its own expense, maintain the following insurance:
- a. Worker's Compensation insurance in compliance with ORS 656.017, which requires subject employers to provide Oregon workers' compensation coverage for all their subject workers
 - b. Professional Liability insurance with a combined single limit, or the equivalent, of not less than \$2,000,000 (two million dollars) per occurrence. This is to cover any damage caused by error, omission or negligent acts related to the Work to be provided under this Agreement.
 - c. General Liability insurance with a combined single limit, or the equivalent, of not less than \$2,000,000 (two million dollars) per occurrence for Bodily Injury, Death, and Property Damage.
 - d. Automobile Liability insurance with a combined single limit, or the equivalent, of not less than \$1,000,000 (one million dollars) for each accident for Bodily Injury and Property Damage, including coverage for owned, hired or non-owned vehicles, as applicable.
 - e. Notice of cancellation or change. There shall be no cancellation, material change, reduction of limits or intent not to renew the insurance coverage(s) without thirty (30) days' prior written notice from the Consultant or its insurer(s) to the City.
 - f. Additional Insured/Certificates of Insurance. Consultant shall name the City of Ashland, Oregon, and its elected officials, officers and employees as Additional Insureds on any insurance policies, excluding Professional Liability and Workers' Compensation, required herein, but only with respect to Consultant's services to be provided under this Agreement. The consultant's insurance is primary and non-contributory. As evidence of the insurance coverages required by this Agreement, the Consultant shall furnish acceptable insurance certificates prior to commencing the Work under this Agreement. The certificate will specify all of the parties who are Additional Insureds. Insuring companies or entities are subject to the City's acceptance. If requested, complete copies of insurance policies; trust agreements, etc. shall be provided to the City. The Consultant shall be financially responsible for all pertinent deductibles, self-insured retentions, and/or self-insurance.
16. **Nondiscrimination:** Consultant agrees that no person shall, on the grounds of race, color, religion, creed, sex, marital status, familial status or domestic partnership, national origin, age, mental or physical disability, sexual orientation, gender identity or source of income, suffer discrimination in the performance of any Work under this Agreement when employed by Consultant. Consultant agrees to comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations. Further, Consultant agrees not to discriminate against a disadvantaged business enterprise, minority-owned business, woman-owned business, a business that a service-disabled veteran owns, or an emerging small business enterprise certified under ORS 200.055, in awarding subcontracts as required by ORS 279A.110.
17. **Consultant's Compliance with Tax Laws:**
- 17.1 Consultant represents and warrants to the City that:

17.1.1 Consultant shall, throughout the term of this Agreement, including any extensions hereof, comply with:

- (i) All tax laws of the State of Oregon, including but not limited to ORS 305.620 and ORS Chapters 316, 317, and 318;
- (ii) Any tax provisions imposed by a political subdivision of the State of Oregon applicable to Consultant; and
- (iii) Any rules, regulations, charter provisions, or ordinances that implement or enforce any of the foregoing tax laws or provisions.

17.1.2 Consultant, for a period of no fewer than six (6) calendar years preceding the Effective Date of this Agreement, has faithfully complied with:

- (i) All tax laws of the State of Oregon, including but not limited to ORS 305.620 and ORS Chapters 316, 317, and 318;
- (ii) Any tax provisions imposed by a political subdivision of the State of Oregon applicable to Consultant; and
- (iii) Any rules, regulations, charter provisions, or ordinances that implement or enforce any of the foregoing tax laws or provisions.

18. **Notice.** Whenever notice is required or permitted to be given under this Agreement, such notice shall be given in writing to the other party by personal delivery, by sending via a reputable commercial overnight courier, by mailing using registered or certified United States mail, return receipt requested, postage prepaid, or by electronically confirmed at the address or facsimile number set forth below:

If to the City:

City Department

Attn: Contract Administrator

Address

Ashland, Oregon 97520

With a copy to:

City of Ashland – Legal Department

20 E. Main Street

Ashland, Oregon 97520

Phone: (541) 488-5350

If to Consultant:

XXXXXXXXXX

XXXXXXXXXXXX

XXXXXXXXXXXX

19. **Governing Law.** This Agreement shall be governed by the laws of the State of Oregon without regard to conflict of laws principles. Exclusive venue for litigation of any action arising under this Agreement shall be in the Circuit Court of the State of Oregon for Jackson County unless exclusive jurisdiction is in federal court, in which case exclusive venue shall be in the federal district court for the district of Oregon. Each party expressly waives any and all rights to maintain an action under this Agreement in any other venue, and expressly consents that, upon motion of

the other party, any case may be dismissed, or its venue transferred, as appropriate, so as to effectuate this choice of venue.

20. **Amendments.** This Agreement may be amended only by written instrument executed by both parties with the same formalities as this Agreement.
21. **Nonappropriations Clause.** Funds Available and Authorized: City has sufficient funds currently available and authorized for expenditure to finance the costs of this Agreement within the City's fiscal year budget. Consultant understands and agrees that City's payment of amounts under this Agreement attributable to Work performed after the last day of the current fiscal year is contingent on City appropriations, or other expenditure authority sufficient to allow City in the exercise of its reasonable administrative discretion, to continue to make payments under this Agreement. In the event City has insufficient appropriations, limitations or other expenditure authority, City may terminate this Agreement without penalty or liability to City, effective upon the delivery of written notice to Consultant, with no further liability to Consultant.
22. THIS AGREEMENT AND THE ATTACHED EXHIBITS CONSTITUTE THE ENTIRE UNDERSTANDING AND AGREEMENT BETWEEN THE PARTIES. NO WAIVER, CONSENT, MODIFICATION OR CHANGE OF TERMS OF THIS AGREEMENT SHALL BIND EITHER PARTY UNLESS IN WRITING AND SIGNED BY BOTH PARTIES. SUCH WAIVER, CONSENT, MODIFICATION OR CHANGE, IF MADE, SHALL BE EFFECTIVE ONLY IN THE SPECIFIC INSTANCE AND FOR THE SPECIFIC PURPOSE GIVEN. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, OR REPRESENTATIONS, ORAL OR WRITTEN, NOT SPECIFIED HEREIN REGARDING THIS AGREEMENT. CONSULTANT, BY SIGNATURE OF ITS AUTHORIZED REPRESENTATIVE, HEREBY ACKNOWLEDGES THAT HE/SHE HAS READ THIS AGREEMENT, UNDERSTANDS IT, AND AGREES TO BE BOUND BY ITS TERMS AND CONDITIONS.
23. **Certification.** Consultant agrees to and shall sign the certification attached hereto as "Exhibit C" and incorporated herein by this reference.

IN WITNESS WHEREOF the parties have caused this Agreement to be signed in their respective names by their duly authorized representatives as of the dates set forth below.

CITY OF ASHLAND:

XXXXXXXXXX (CONSULTANT):

By: _____
Joseph L. Lessard, City Manager

By: _____
Signature

Date

Printed Name

Title

Purchase Order No. _____

Date

(W-9 is to be submitted with this signed Agreement)

APPROVED AS TO FORM:

City Attorney

Date



1600 Valley River Drive, Suite 380 ■ Eugene, OR 97401 ■ Phone (541)-228-9353

June 23, 2023

Thomas McBarlett III
Electric Director
City of Ashland
90 N. Mountain Avenue,
Ashland, OR 97520

Attn: Mr. Thomas McBarlett

Subject: Electrical Engineering Services for Electrical System Master Plan

Stoddard Power Systems, LLC (SPS) is pleased to provide the attached engineering proposal for the 10-year planning master plan for the City's electric utility in accordance with the City of Ashland request for proposal.

SPS is a small, Oregon based consulting firm with consulting engineers having many years of experience providing services to municipal utilities. We hope you get an opportunity to speak with some of our utility client references to find out more about us and the expertise and customer service we can bring to you.

Please direct any questions regarding our proposal to Martin Stoddard per the following:

Martin Stoddard, P.E.
Principal - Stoddard Power Systems, LLC
1600 Valley River Drive - Suite 380
Eugene, OR 97401
Office: 541-228-9353
Cell: 541-250-5646
martin.stoddard@stoddardpower.com

We appreciate the opportunity to be of service to the City of Ashland. We look forward to hearing from you and hope to meet you in person in the near future.

Sincerely,

A handwritten signature in dark ink, appearing to read 'MS' followed by a stylized flourish.

Martin Stoddard, P.E.
Stoddard Power Systems, LLC

Enclosure

Original Copy

EXHIBIT A

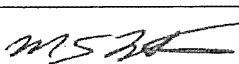
Request for Proposals ELECTRIC SYSTEM MASTER PLAN May 24, 2023

Proposal Submission Form

The undersigned proposer submits this proposal in response to the City's Request for Proposals (RFP) for **Electric System Master Plan**, released on May 24, 2023. The proposer warrants that the proposer has carefully reviewed the RFP and that this proposal represents the proposer's full response to the requirements described in the RFP. The proposer further warrants that if this proposal is accepted, the proposer will contract with the City, agrees to the terms and conditions found in the attached contract and RFP or has submitted terms and conditions acceptable to the City, and will provide all necessary labor, materials, equipment, and other means required to complete the work in accordance with the requirements of the RFP and contract documents.

The proposer hereby acknowledges the requirement to carry or indicates the ability to obtain the insurance required in the contract. Indicate in the affirmative by initialing here: MM

The proposer hereby acknowledges receipt of Addendum Nos. 1, 2, _____, _____, _____ to this RFP.

Full legal name of company:	Stoddard Power Systems
Principle owner's name:	Martin Stoddard
Business Address:	1600 Valley River Drive, <i>Suite 380</i> Eugene, Oregon 97401
State and location of company headquarters:	Eugene, Oregon
Year business established:	2021
Telephone Number:	541 228 9353
Fax Number:	N/A
Email Address:	martin.stoddard@stoddardpower.com
Authorized Signature:	
Printed/Typed Name:	Martin Stoddard
Title:	Principle Engineer, President
Date:	06/23/2023



TECHNICAL PROPOSAL FOR ELECTRICAL SYSTEM MASTER PLAN

For City of Ashland, Oregon

Date: 06/23/2023

By: 
Martin Stoddard, President
Stoddard Power Systems

Original Copy

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SECTION 1: INTRODUCTION

1.1 Project Understanding

The City of Ashland (City) is seeking proposals for developing an electrical master plan for the City's electric utility. The City serves customers from three step-down substations - Ashland, Mountain Avenue, and Oak Knoll, with a total of 10 feeders currently serving approximately 13,000 customers (meters). Mountain Avenue Substation was recently purchased by the City from BPA. The other two substations are owned by PacifiCorp. In the past ten years, the City has implemented various upgrades to the system but significant growth from new developments along with the age of some of the electric assets has resulted in the need for an evaluation to determine prioritized improvements to allow the system to serve the City's customers while supporting growth without overstressing components.

This proposal is organized based on the required submittal contents. Section 1 presents our understanding of the project. Section 2 summarizes our experience and qualifications and describes the structure of our project team. Section 3 describes the scope of work (task list) and timeline to complete the Electrical System Master Plan. Section 4 provides similar projects performed by the project team and their associated references. Section 5 introduces our assumptions and cost estimate.

1.2 Company Profile

Stoddard Power Systems, LLC (SPS) is a Veteran Owned Small Business home based in Eugene, Oregon serving power generation, utility, industrial, and heavy commercial customers throughout the United States. Our staff consists of a group of professional engineers (licensed in Washington, Oregon, Alaska, Florida, California, Montana, Idaho, New Mexico, and Texas) and power systems experts with many decades of experience. Stoddard Power Systems offers a variety of electrical engineering services including power system design, electrical analysis and studies, troubleshooting, failure analysis, controls, and more. Our team is proficient in all elements of utility engineering services including substation design, distribution design (overhead and underground), transmission design, protective relaying, planning studies, risk mitigation plans, power factor correction, interconnect studies, power systems analysis, and SCADA design and integration.

SECTION 2: QUALIFICATIONS

2.1 Qualifications

Stoddard Power Systems is a qualified engineering firm providing consulting services to utility and other clients. We regularly provide system planning analysis for utility clients. Our typical approach includes an early comprehensive review with the customer to ensure a clear project definition and expectations. For this project the objective is well defined as evaluating the existing electrical system, load forecast, and major equipment inventory to develop a system improvement/upgrade plan. Additionally, our engineers have many years of experience providing system planning studies and engineering services directly to the City of Ashland and we will be able to begin the project with an extensive knowledge of the City's system. However, we will also take this opportunity to take a fresh look at the City's infrastructure and needs to ensure the recommendations presented are optimized for the current and expected needs.

2.2 Project Staffing

Our project team will consist of the following personnel with their specific roles and expected project utilization. Resumes of significant team members are included in Appendix (Section 7). We do not anticipate services from any sub-consultants.

Martin Stoddard, P.E. (10%) – Project Manager, Engineer of Record.

Jiajia Song, P.E. (50%) – Lead Project Engineer.

Jerry Witkowski, P.E. (30%) – Project Engineer.

Staff Designer/Drafter/Admin (10%) – Document Drafting and Assembly

Note: Engineers' credential, experience, and proof of license (PE Licence No.) is provided in the personal resume in Appendix B.

Table 1: Project Team Structure

Project Manager / Engineer of Record Martin Stoddard, P.E. Stoddard Power Systems 10% allocated to project		
Administrative	Electrical Engineers	Sub-Consulting Engineers
Design/Drafting/Admin General Office Staff Stoddard Power Systems 10% allocated to project	Lead Project Engineer Jiajia Song, P.E. Stoddard Power Systems 50% allocated to project	---
	Project Engineer Jerry Witkowski, P.E. Stoddard Power Systems 30% allocated to project	---

SECTION 3: RELEVANT EXPERIENCE

3.1 Experience

SPS currently is the on-call engineering service provider to several municipal utilities and electrical cooperatives. The table below lists and describes several recent projects with scope elements similar to the City's project. This is a small subset of recent relevant projects completed by our engineers. Additional project examples can be provided upon request.

Table 2: List of Related Experience

Project Name	Project Description
City of Bandon 10-Years System Planning Study [Emphasis: System Planning Study] Client: Jim Wickstrom, City of Bandon, Electric Department 555 US-101, Bandon, OR 97411 541-347-2437 x 233 PM: Martin Stoddard Engineers: Jiajia Song	Description: The engineers at SPS are performing an electrical system evaluation and developing an orderly and economical improvement plan for the City. The evaluation and capital improvement plan is intended to help ensure the electrical system has the operational capacity, reliability and flexibility to meet its planning criteria. Date Completed: Ongoing, to be completed in December 2023.
City of Drain 10-Years System Planning Study [Emphasis: System Planning Study] Client: Harold Burris, City of Drain, Electric Department 129 West C Avenue Drain, OR 97435 541-836-2037 PM: Martin Stoddard Engineers: Jerry Witkowski, Jiajia Song	Description: The engineers at SPS performed an electrical system evaluation and developed an orderly and economical improvement plan for the City. The evaluation and capital improvement plan was developed to help the City ensure the electrical system has the operational capacity, reliability and flexibility to meet its planning criteria. The study identified and recommended system improvements that would allow the City to supply adequate quality power to serve customers into the intermediate future (10 years), and practical improvements that will provide service into the long-term future. An arc-flash hazard risk evaluation was performed as a part of the project. Date Completed: January 2021
City of Milton-Freewater 10-Years System Planning Study [Emphasis: System Planning] Client: Mike Watkins, City of Milton-Freewater 722 S Main St. Milton-Freewater, OR 97862 541-938-5531 PM: Jerry Witkowski	Description: The engineers at SPS performed an electrical system evaluation and developed an orderly and economical improvement plan for the City. The evaluation and capital improvement plan was developed to help ensure the electrical system has the operational capacity, reliability and flexibility to meet its planning criteria. The study identified and recommended system improvements that will allow the City to supply adequate quality power to serve customers into the intermediate future (10 years), and practical improvements that will help in providing service into the long-term future. An arc-flash hazard risk evaluation was performed as a part of the project. Date Completed: June 2020

Project Name	Project Description
Columbia Basin Electric Cooperative 10-Years System Planning Study [Emphasis: System Planning] Client: Brian Kollman, Columbia Basin Electric Cooperative 171 W Linden Way Heppner, OR 97836 541-676-9146 PM: Martin Stoddard	Description: The engineers at SPS performed an electrical system evaluation and develop an orderly and economical improvement plan for CBEC. The evaluation and capital improvement plan was intended to help ensure the electrical system has the operational capacity, reliability and flexibility to meet its planning criteria. The study identified and recommended system improvements that will allow the Coop to supply adequate quality power to serve customers into the intermediate future (10 years), and practical improvements for long-term future operation. Date Completed: February 2015
Lane Electric 10-Years System Planning Study [Emphasis: System Planning] Client: Doug Stockdale, Lane Electric, 787 Bailey Hill Road Eugene, OR 97402 Phone: 541-484-1151 PM: Jerry Witkowski	Description: The engineers at SPS performed an electrical system evaluation and develop an orderly and economical improvement plan for Lane Electric. The evaluation and capital improvement plan was intended to help ensure the electrical system has the operational capacity, reliability and flexibility to meet its planning criteria. The study identified and recommended system improvements that would allow Lane to supply adequate quality power to serve customers into the intermediate future (10 years), and practical improvements that should be valid to provide service into the long-term future. Date Completed: July 2014
Vera Water and Power 10-Years System Planning Study [Emphasis: System Planning] Client: Kevin Wells, Vera Water and Power 601 N Evergreen Rd. Spokane Valley, WA 99216 Phone: 509-924-3800 PM: Jerry Witkowski	Description: The engineers at SPS performed an electrical system evaluation and develop an orderly and economical improvement plan for VERA. The evaluation and capital improvement plan was intended to help ensure the electrical system has the operational capacity, reliability and flexibility to meet its planning criteria. The study identified and recommended system improvements that would allow Vera to supply adequate quality power to serve customers into the intermediate future (10 years), and practical improvements that should be valid to provide service into the long-term future. Date Completed: June 2014
City of Ashland Hersey Street Underground Project [Emphasis: Underground Feeder Design] Client: Tom McBartlett, City of Ashland, Electric Department 90 N. Mountain Avenue Ashland, OR 97520 541-552-2314 PM: Martin Stoddard Electrical Engineers: Jerry Witkowski,	Description: Following the preparation of a 10 Year Planning Study, the engineers at SPS developed a design for approximately 1.2 miles of multiple conduit underground 15-kV feeder circuits from the Mountain Avenue Substation along Hersey Street to N. Main Street, a busy residential and commercial area. The work included underground circuit ductbanks details and vault designs, with contract document preparation consisting of drawings and technical specifications for bidding. Prepared cost estimates and assisted with Contractor award. Project Total Cost: ~\$1.4M Date Completed: October 2019

3.2 Previous Work with the City of Ashland

SPS engineers Martin Stoddard, Jerry Witkowski, and Jiajia Song have been providing engineering services to the City for several decades. The following is a short list of some of the significant projects completed with the City.

On-Call Engineering Service Provider, for over two decades. Providing engineering support to the Electric Department on various equipment sizing, design, protection setting review, large subdivision development, large EV charge station, line extensions, residential/commercial PV source interconnection, technical document development/update, grant application, etc.

Wildfire Mitigation Plan, 2022. The intent of the wildfire mitigation plan is to document and review the City's existing wildfire policies and procedures and develop an up-to-date wildfire mitigation plan that meets all requirements of the 2021 SB 762 and Oregon Public Utility Commission (OPUC). The overall objective of developing and executing a wildfire mitigation plan is to minimize possible sources of ignition, improve the system resiliency of the electric network, and identify and correct ineffective procedures.

City of Ashland Hersey Street Underground Project, 2019. Following the preparation of a 10 Year Planning Study, the engineers at SPS performed design for approximately 1.2 miles of multiple conduit underground 15-kV feeder circuits from the Mountain Avenue Substation along Hersey Street to N. Main Street, a busy residential and commercial area. The work included underground circuit detail ductbanks and vault designs, with contract document preparation consisting of drawings and technical specifications for bidding. Prepared cost estimates and assisted with Contractor award.

Oak Knoll Substation Feeder Controller Upgrade, 2018. Engineering design to replace the feeder protection controllers with Cooper Form 6, and provide updated protection and control settings.

City of Ashland PV Generation Interconnect Analysis, 2017. This project is a review of options, interconnect feasibility, and cost estimate for adding a large-scale PV generation facility and connecting it into the City's existing electrical distribution system.

Mountain Avenue Substation Expansion, 2010. Engineering design to add three additional feeders to the MAS substation, including distribution rack expansion, control and protection design, etc.

Reeder Gulch Hydro Power and Control Upgrade, 2009. Engineering design of new generator switchgear and all controls. Control equipment included new protective relays, PLCs, HMI Touchpanels, auto synchronizers, inverters, and all associated controls. We also provided complete control programming and startup and commissioning of the system.

10-Years System Planning Study, 2013. The engineers at SPS performed an electrical system evaluation and develop an orderly and economical improvement plan for the City. The evaluation and capital improvement plan was intended to help ensure the electrical system has the operational capacity, reliability and flexibility to meet its planning criteria. The study identified and recommended system improvements that would allow the City to supply adequate quality power to serve customers into the intermediate future (10 years), and practical improvements that should be valid to provide service into the long-term future.

Ashland Substation Feeder Controller Upgrade, 2011. Engineering design to replace the feeder protection controllers with Cooper Form 6, and provide updated protection and control settings.

10-Years System Planning Study, 2003. The engineers at SPS performed an electrical system evaluation and develop an orderly and economical improvement plan for the City. The scope was identical to the one discussed above for 2013.

SECTION 4: SCOPE OF WORK

Our typical approach for a system planning study for small utility systems is to provide evaluation and analysis for a 10-year span. Specific elements include:

Data Collection: Perform a walk-through of the City's electrical network with the City's Electrical Department to document system conditions for all major components. Inspection will include an evaluation of condition. We also work with City personnel to obtain system protection data including major fuses and relays as well as historical meter data from the City and BPA.

Load Forecast: Evaluate the City's system-wide growth patterns based on historical, recent (prior 10-year period) and expected future growth, from data provided by the Electric Department and population/load projections from the City and BPA. Evaluate past electric energy and demand usage, in the month and seasonal patterns, to forecast future loading to be presented in summation tables. This data will be used to estimate feeder and substation peak loading through system analysis and to determine recommended system improvements.

System Planning Criteria: Establish realistic planning criteria and objectives upon which short-term and long-term planning should be based. These planning standards are used to determine loading guidelines, the appropriate level of backup under outage conditions, economic conductor sizes, acceptable voltage drop levels, and improvement timing.

Transmission and Substation Evaluation: Evaluate the existing transmission system facilities serving the City for interconnection and switching flexibility, looping capabilities, isolated segments, and overall operation and performance for power supply and delivery to the City's facilities. Also, evaluate the existing substation points-of-delivery for equipment ratings, capacities, and configurations. This effort is to include consideration of reliability, protection components, protection philosophy, interruption frequency and duration, power availability and the ability to serve growth, and operation and maintenance programs.

Analysis of the Existing System: Evaluate the ability of the existing electric system to provide economical, high-quality service in terms of component loading, voltage levels, line losses, power factor, and reliability in the short-term and intermediate future. This effort includes a review of the existing system performance based on the following criteria to identify and determine cost-effective measures that can improve system performance:

- System reliability
- System capacity
- System flexibility
- System and feeder peak loads
- System construction practices
- Operation and maintenance policies
- Environmental sensitivity
- System equipment aging
- Identification of trouble spots and poorly performing equipment
- Review adequacy of system record keeping

Major Equipment Inventory Review and Replacement Schedule: Working with the city staff to review transformer, pole, and conductor inventory, and create a practical replacement schedule based on the forecast and system improvement recommendations.

Other Considerations from Renewable Energy Resource Addition, Increased EV Charging Demand, Climate & Energy Action Plan, and Wildfire Mitigation Plan:

- Evaluate the feasibility of adding large and small scale renewable energy sources such as solar, wind, small hydro, etc.
- Provide system improvement recommendations based on the forecasted EV addition and associated demand pattern.
- Recommendations for integration of the City's Climate and Energy Action Plan in the Electric System Master Plan
- Recommendations for integration of the City's Wildfire Mitigation Plan in the Electric System Master Plan

Power Flow Analysis: Analyze the electric system circuits using computer modeling software. The system will be modeled on a system-wide three-phase basis using the *EasyPower* software package. The power flow analysis modeled the system for the High and Low load conditions:

The Power Flow analysis is to be performed for the conditions noted above to identify various system configuration voltage drops, load balance, real and reactive power flows, and system losses at each system bus as labeled.

Short Circuit Analysis: A short circuit analysis will be performed under the Base Case configuration to update the maximum fault availability throughout the system. The results will be presented in the Short Circuit Chapter with detailed fault data examples and analysis output reports. The short circuit ratings for all equipment will be evaluated for adequacy based on the expected maximum short circuit currents.

Protective Device Coordination: Using the system model developed for the power flow and short circuit calculations, the system coordination and protection will be evaluated. For each distribution feeder a time-current curve coordination chart showing the devices listed below will be presented:

- Transformer damage curve
- Conductor or insulation damage curve
- Maximum available short circuit symmetrical and asymmetrical fault current
- Time-current curves of primary protection devices
- Time-current curves of secondary protection devices
- Time-current curves of major backbone protection devices

The results will be presented in detailed tabulation with recommended settings for existing protective devices. In addition, analyses of coordination charts and recommended protective device changes that will improve system reliability will be prepared and included. The development of a fusing application guide for the sizing of downstream fuses will also be provided.

Prepare Electric System Study Report: A report summarizing the results of the study will be prepared that includes:

- Documentation of references, planning criteria, related calculations, computer reports, and techniques used in the analysis.
- Analysis and evaluation of the existing electric system, identification of alternative improvement options and suggested areas that need focused attention.

- A list of conclusions, recommendations, and proposed system improvements with projected construction timing and estimated costs.
- System maps and analysis plots showing the configurations and results of the various study cases, including recommended system improvements.

4.1 Work Plan and Schedule

We will be ready to commence work within one week of notice to proceed. Based on this an approximate schedule for major tasks is provided in Table 3. This is a preliminary schedule and can be expedited or deferred as directed by the City. We will work closely with the City staff to develop a schedule that meets your requirements.

Table 3: Work Schedule

Task	After Notice to Proceed
Kickoff Meeting and Data Collection	2 Week
System Analysis	8 Weeks
Report Development	12 Weeks
Submit Draft Report	14 Weeks
Comments From City	16 Weeks
Final Report Submission	18 Weeks

SECTION 5: REFERENCES

5.1 References

Table 4: List of References

Contact Info	Services Provided
Columbia Basin Electric Cooperative Brian Kollman / Manager of Operations 171 W Linden Way Heppner, OR 97836 Phone: 541-676-9146 briank@columbiabasin.com	The engineers at SPS have provided engineering services for CBEC since 2002 including multiple substation designs, power system studies, capacitor bank designs and programming, transmission line designs, and 10-year planning studies.
Vera Water and Power Kevin Wells / General Manager 601 N Evergreen Rd. Spokane Valley, WA 99216 509-924-3800 kwells@verawaterandpower.com	Complete substation design in 2015 and 2016. Performed a 10-year planning study in 2014. Provided design which included provisions for easy expansion to implement second transmission source and transformer bank, plus distribution rack extension. Provided design basis for other further substation improvements of other substations with design work done by Vera's in-house engineers. We provided a complete SCADA system replacement in 2017.
Monmouth Power and Light Mike Gregory / Acting Operation Superintendent 780 Echois St. S Monmouth, OR 97361 503-838-3526 mgregory@ci.monmouth.or.us	Provided engineering services for multiple developments and extensive underground design projects, including the feeder getaways from their newer substation. Provided on-call support for substation technical concerns. We are actively providing engineering services to MPL.
City of Drain Harold Burris / Lineman 431 Payton Avenue Drain, OR 97435 541-836-2037 pwforeman@cityofdrain.org	Provided engineering services for multiple developments, power system studies, wildfire mitigation plan, and on-call support for substation technical concerns. Performed a 10-year planning study in 2021. We are actively providing engineering services to the City.
City of Bandon Jim Wickstrom / Superintendent City of Bandon, Electric Department 555 US-101, Bandon, OR 97411	Provided engineering services for multiple developments, coordination studies, and on-call support for substation technical concerns. We are currently performing a 10-year planning study (2023). We are actively providing engineering services to the City.

Contact Info	Services Provided
541-347-2437 x 233 jwickstrom@ci.bandon.or.us	
Northern Wasco County PUD Garrett Mauritsen / Staff Engineer 2345 River Rd, The Dalles, OR 97058 Phone: 541-298-3318 Garrett-Mauritsen@nwascopud.org	The engineers at SPS have provided engineering services including four substation designs/upgrades (two of them are ongoing), hydro powerhouse upgrade, power system studies, backup generator design, etc..
City of Milton-Freewater Mike Watkins / Electric Superintendent City of Milton-Freewater 722 S Main St. Milton-Freewater, OR 97862 Phone: 541-938-5531 Mike.Watkins@milton-freewater-or.gov	The engineers at SPS have provided engineering services for CMF since early 2000 including two substation designs, power system studies, wildfire mitigation plan, and 10-year planning studies.

SECTION 6: TERMS AND CONDITIONS

6.1 Contractual Terms and Conditions

Stoddard Power Systems has a standard contract based on EJCDC contract specifications. However, we are currently under contract with the City of Ashland and have accepted the City's terms and conditions. The contract between SPS and the City of Ashland is dated March 30, 2022 and we expect similar terms and conditions will be used for this contract. We do not anticipate any concerns regarding contract terms with the City.

SECTION 7: APPENDIX

7.1 Appendix A – Stoddard Power Systems Standard Rates

Attached externally.

7.2 Appendix B – Resumes

Attached externally.

Stoddard Power Systems, LLC

STANDARD HOURLY BILLING RATES

Standard Hourly Rates are set forth in this Attachment A and include salaries and wages paid to personnel in each billing class plus the cost of customary and statutory benefits, general and administrative overhead, non-project operating costs, and operating margin or profit.

The Standard Hourly Rates are subject to annual review. The rates set for in this Attachment are effective through **January 1, 2024**.

SCHEDULE OF HOURLY RATES

CLASS	DESCRIPTION	RATE
EN5	Principal Engineer	\$195.00/hr
EN4	Senior Engineer	\$160.00/hr
EN3	Lead Engineer	\$130.00/hr
EN2	Staff Engineer	\$115.00/hr
EN1/CAD	Engineer/Designer/Inst Technician/Drafter	\$90.00/hr
ADMIN	Office/Administrative Support	\$55.00/hr

EXPENSES

Direct Expenses billed at cost plus 10%.
Subconsultant invoices billed at invoice plus 10%
All materials billed at cost plus 15%

Martin L. Stoddard, P.E.
Principal Electrical Engineer



Education

MS, Electrical Engineering, University of Washington
BS, Electrical Engineering, Oregon State University

Professional Engineering Registration

Oregon 70823PE
Washington 51452
Montana PEL-PE-LIC-31107
Florida 84826
Alaska 130554

Work Experience

Mr. Stoddard has over 25 years of experience in power system design and analysis and is the owner and president at Stoddard Power Systems, LLC. Prior to starting Stoddard Power he was the Chief Engineer and director of engineering at OS Engineering, the engineering division of Olsson Industrial Electric, where he managed a department of ~40 engineers and technicians and provided engineering support to over 200 electricians. Prior to OS Engineering he was co-owner of CVO Electrical Systems, LLC, a small consulting firm specializing in power system design and analysis. Mr. Stoddard was a researcher at the Pacific Northwest National Laboratory (PNNL) in Richland, Washington where he conducted research in power system analytics and control system security. Prior to PNNL, Mr. Stoddard worked as a consulting engineer at Electrical Systems Analysis (ESA) where his responsibilities included the performance of power system studies and the design and integration of electrical system IEDs and SCADA control systems.

Mr. Stoddard was also a U.S. Navy Submarine Officer where he operated and maintained a submarine nuclear propulsion plant. His responsibilities included the maintenance and operation of the 450 VAC distribution system, the mechanical systems, and the control systems associated with the ships nuclear propulsion plant. During his tour he qualified as a Naval Nuclear Engineer and served as the ship's Assistant Engineer.

Mr. Stoddard has considerable expertise in the design, programming and integration of a wide range of Intelligent Electronic Devices (IEDs), Programmable Logic Controllers (PLCs), and Supervisory Control and Data Acquisition (SCADA) systems. He has also performed numerous power system studies including short circuit calculations, equipment duty evaluations, protective device coordination, arc-flash hazard analysis, and harmonic analysis.

Representative Projects at Stoddard Power Systems

RS Kerr GSU Transformer Relocation – Lead design engineer for a design build project to relocate two 80 MVA GSU transformers from the hydroelectric dam tailrace to a new switchyard extension. Provided site plans, containment design, transmission tower design, fire walls, and 2000 A cable bus duct design.

Foster Dam Electrical Reliability Upgrade – Lead design engineer for a major electrical renovation of the Foster Dam powerhouse including new 4160V switchgear, double ended 480V substation, three 480V MCCs, 1700 Ahr battery bank, redundant battery chargers, redundant preferred AC inverters, battery monitoring system, relay control panels, and a renovated and upgraded diesel generator room.

Representative Projects at OS Engineering

Little Goose Station Service Transformers – Lead engineer for the prime contractor on a station service upgrade involving the replacement of two class 1, water cooled power transformers. Responsibilities include coordinating supplier selection, submittal reviews, technical interface with the US Army Corps of Engineers design team, writing commissioning plans and serving as commissioning engineer.

The Dalles Navlock – Lead engineer for the electrical contractor on a complete electrical and controls replacement of The Dalles Navlock system involving the replacement of a double ended unit substation, motor control centers, switchboards, and controls and drive systems for an upstream radial arm gate and a downstream miter gate. Responsibilities include coordinating supplier selection, submittal reviews, technical interface with the US Army Corps of Engineers design team, writing commissioning plans and serving as commissioning engineer.

Vera Water and Power 16th Avenue Substation, Spokane, WA – Project engineer on a complete substation design for a new distribution substation with a new 115kV tap, 15/20/25 MVA transformer, regulator bank, distribution rack, and four (4) feeders with reclosers and controls. Provided protective device relays settings, design reviews, customer training, commissioning, and final acceptance inspection.

LUS NFPA 70E Training– Developed a training course and instructed approximately 35 operators and technicians in electrical safety and breaker operations associated with the Lafayette Utility System (LUS) steam and combined cycle power plants. Course instruction included topics from NFPA-70E, NESC, and other standards.

Western Interlock Power Quality Study and Analysis, Rickreal, OR – Principle engineering for the investigation and correction of power system deficiencies at the plant in Rickreal, Oregon. Power quality issues leading to system trips were investigated and a number of deficiencies were found both in the distribution equipment and service supply. Electrician support for the project was provided by Olsson.

Roseburg WM PT Analysis – Lead engineer for the investigation of PT failures on the distribution line intertie between the Roseburg Waste Management generation system and the utility distribution line. Performed system monitoring and analysis of ferroresonance conditions and provided recommended corrective actions.

EWEB Crest Pump Station Design, Eugene, OR – Lead design engineering for the design of replacement distribution equipment for the utility pump station to bring the station up to code compliance. The project included a field verification of existing components, written report of recommended corrective actions, design drawings of system modifications, and services during construction.

HC&S System Analysis– Lead engineer in the investigation of surge events and stability problems associated with the electrical distribution of the HC&S Sugar Mill in Maui, Hawaii. Performed detailed review and analysis of relaying, grounding, and transient conditions in the system and provided a detailed report with recommendations for corrective actions.

Dexter Dam ERU– Lead engineer for the prime contractor on an electrical reliability upgrade involving the replacement of three double ended station service unit substations. Responsibilities include coordinating supplier selection, submittal reviews, technical interface with the US Army Corps of Engineers design team, writing commissioning plans and serving as commissioning engineer.

Grace Arc-Flash Study, Albany, OR – Principle engineering for an arc-flash hazard and short circuit study for the Grace Chemical Plant in Albany, OR. Study included a complete inspection of the existing system and the development of system improvement recommendations and analysis results.

RFP Missoula Forming Line – Principle electrical engineer on a new service tap and substation for a particle board forming line that included a new electrical room at the Roseburg Forest Products Missoula Particleboard plant. Included specification and design of a replacement 2000kVA substation transformer, PDC, MCCs, lighting, grounding, variable frequency drives, and metering. Responsible for all drawings, specifications, and protective device settings.

Hydroelectric Powerhouse Startup, Dorena Hydro LLC, Cottage Grove, OR – Designed generator high resistance ground system, air terminal chamber, and surge protection for a two 12.47kV generator hydroelectric power plant. Performed engineering assessment of the system and commissioned the generators and protective relays. Performed analysis and design assistance for a shunt excited DC motor drive hydraulic pump for the gate operators.

Compressor Room Design and H-Frame Reconstruction, Roseburg Forest Products, Weed, CA – Senior engineer on a new compressor room electric distribution system including retrofit of existing substation PDC to add new grounding transformer and 800A feeder to compressor room, new 800A PDC, lighting, grounding, and distribution equipment. Provided feasibility analysis and preliminary design for the replacement of an H-Frame tower with 2400V distribution to a padmount VFI configuration.

Pump 4 Disassembly and Forensic Analysis, US Army Corps of Engineers John Day Dam, Rufus, OR – Technical lead for the prime contractor on a deconstruction and forensic assessment of a 450Hp, vertical drive pump for the John Day Dam North Shore Fish Ladder system. Coordinated development of disassembly scope and let technical teams from Advanced American Construction, the US Army Corps of Engineers, and Power Engineering.

Substation Main Breaker Troubleshooting, Oregon State University Energy Center, Corvallis, OR – Electrical engineer, provided technical troubleshooting when the main 20.8kV breaker (breaker 52-1) failed to close following an external fault. Identified the root cause as a remote trip and enable system with the utility supplier PacifiCorp and designed a seal in annunciation system to provide operators indication of remote trip.

North Shore Hydroelectric Powerplant Backup Generator, Northern WASCO County PUD, The Dalles, OR – Designed a backup generator system and outdoor building to provide automated backup power for the north shore fish ladder hydro electric power plant. System included a 125kW generator, load bank, transfer switches, generator building, underground distribution, and automated load shedding scheme. Provided design drawings, specifications, and bid documents.

Veneer Dryer Replacement, Roseburg Forest Products, Weed, CA – Lead design electrical engineer on a replacement Veneer Dryer and new electrical room for the RFP Weed Veneer plant. Included specification and design of a replacement 1500kVA substation transformer, PDC, MCCs, lighting, grounding, and metering. Developed drawings, specifications, and protective device settings. Developed short circuit model for system analysis.

Stud Mill and Mill A Load Flow Study, Seneca Sawmill, Eugene, OR – Senior electrical engineer for a load flow study of the Seneca Sawmill Stud Mill and Mill A medium voltage feeders and Substation A1, A2, and A3 480V distribution. Coordinated metering points, data collection, analysis and reporting for the load flow analysis. Provided written report of analysis results.

Board Edger Replacement, Dillard Sawmill, Roseburg Forest Products, Dillard, OR – Lead design engineer a new MCC room and high resistance ground system for a replacement board edger. Designed included PDC retrofit, 1200A MCC, lighting, auxiliary systems, lockout panels, cable and conduit schedules, and substation high resistance ground system. Provided stamped design drawings and components specifications. Modeled system in EasyPower and provided coordinated protective device settings.

Mill Load Flow Study, Weed Veneer Plant, Roseburg Forest Products, Weed, OR – Senior engineer a mill wide load flow study. Included data collection for most major 2400V feeders and 480V substations. Provided a written report detailing system loading and recommendations for system improvements.

Class I, Division I, Chemical Storage Building, Roseburg Forest Products, Dillard, OR – Senior engineer for the design of electric distribution for a hazardous material storage building. Design included sealed Class I, Division I electrical distribution and lighting. Provided stamped design drawings.

Non-Combustible Gas Tower Grounding, International Paper, Springfield, OR – Lead design engineer for the grounding and lightning protection of a NCG lattice tower. Provided stamped design drawings with grounding and lightning protection details and equipment bill of materials.

Distribution Improvements Feasibility Study, Timber Products, Yreka, CA – Provided feasibility analysis and preliminary design of replacement medium voltage service and main 480V substations. Design included medium voltage feeders, substation transformers, and main power distribution centers.

69kV Breaker CT Replacement, Weed Veneer Plant Substation, Roseburg Forest Products, Weed, CA – Provided engineering assistance in the replacement of bushing current transformers on a 69kV substation breaker. Engineering assistance included coordination of metering accuracy, secondary circuit verification, breaker SF6 evacuation, and post replacement testing.

The Dalles SCC Functionality Modifications, US Army Corps of Engineers The Dalles Dam, The Dalles, OR – Senior engineer for the design of a replacement annunciation system, governor controls upgrade, main unit metering, and redundant governor PLC network architecture for The Dalles dam. Design services included a 30% feasibility design report and review, 60% preliminary design report and review, and 100% complete design and review.

Paper Machine #2 Transformer Replacement, Georgia Pacific, Halsey, OR – Designed a replacement transformer system and enclosure with medium voltage primary disconnect, four 1000kVA 12.47kV to 480V transformers, and primary and secondary fusing. Design included equipment specifications and detailed drawings.

Preferred AC Inverter and Distribution Replacement, The Dalles Lock and Dam, US Army Corps of Engineers, The Dalles, OR – Lead design engineer for a replacement fully redundant preferred AC system for The Dalles Dam. System consisted of dual 30kVA inverters, dual 10kVA inverters, backup transformers, main distribution boards, dual feeders, and the replacement of all remote panels. Design included detailed drawings, specifications, commissioning specifications, functional test plans, and submittal coordination.

Representative Projects at CVO Electrical Systems, LLC

Bonneville PH2 480V Station Service Switchgear Replacement, US Army Corps of Engineers, Cascade Locks, OR – Lead engineer for the prime contractor on a station service upgrade involving the replacement of three double ended station service unit substations. Responsibilities include coordinating supplier selection, submittal reviews, technical interface with the US Army Corps of Engineers design team, writing commissioning plans and serving as commissioning engineer. Specific engineering scope included transient analysis for vacuum breaker switching transients, customized switchgear layout and design, relaying and transfer control programming, fiber optic arc-flash detection design, air terminal chamber design, and the technical challenges associated with the replacement of station service switchgear in an operating power plant without a loss of service or reliability

GSU Substation and Relaying Replacement for The Dalles North Shore Hydro, Northern Wasco County PUD, The Dalles, OR – Lead engineer for the design, procurement, installation, and commissioning of a replacement primary unit substation and protective relaying for a 6.5MW hydroelectric power project on the north fish ladder of The Dalles Dam. Developed detailed design drawings, procurement specifications, and provided all protective relay settings.

John Day Dam North Fish Ladder AWS Pump Replacement Project, US Army Corps of Engineer, Rufus, OR – Lead engineer for the prime contractor on a fish ladder auxiliary water supply system replacement involving the design and installation of a complete control building and electrical distribution system. Performed detailed designs of the electric distribution system including double ended substation, distribution panels, VFDs, UPS, building auxiliaries, cable vault, and pump chamber cable tray. Provided cable pull calculations for 15kV cable pulls. Coordinated all manufacturer designs. Developed commission plans and served as lead commissioning engineer.

The Dalles Dam Station Service Improvements, US Army Corps of Engineers Dalles Dam and Lock, Dalles, OR – Lead engineer for the prime contractor on a major reliability upgrade to the Dalles dam hydroelectric station service system including the replacement or modification of the majority of the medium voltage and low voltage station service distribution system. Responsibilities included coordinating manufacturer designs, submittal reviews, technical interface with the US Army Corps of Engineers design team, commissioning plan development and serving as commissioning engineer. Lead designer for several design build changes including new multi-zone GSU relaying for T1 transformer, 480V transfer controls, complete DC system design, replacement unit substations FSQ5 and FSQ6, medium voltage lighting feeder transfer switches, and an automated control system for station service transformer cooling..

Detroit/Big Cliffs Dam Electric Reliability Upgrades, US Army Corps of Engineers, Detroit, OR – Lead commissioning engineer for prime contractor on LVA and MVA equipment. Coordinated submittals, developed commissioning plans and served as commissioning engineer for replacement medium voltage and low voltage switchgear, current limiting reactors, and station service transformers.

Wren Substation Relaying, Consumers Power Inc., Philomath, OR – Lead engineer, provided protective device relay settings for replacement SEL311C and SEL787 relays installed to replace existing ABB MSOC and older electromechanical relays at the Wren Substation.

John Day Dam North Fish Ladder 13.8kV Feeder, US Army Corps of Engineer, Rufus, OR – Lead engineer for the electrical contractor responsible for new feeder taps and distribution equipment. Coordinated all engineering activities associated with two isophase bus taps, current limiting reactors, and medium voltage switchgear. Developed commissioning plans and served as lead commissioning engineer.

2.0 MG Reservoir Improvements, Canby Utility Board WTP, Canby, OR – Lead systems integrator and electrical engineer for the 13th Street 2.0 million gallon reservoir expansion project. Designed and integrated level controls and PLC programming for reservoir integration into City water control system.

Reeder Gulch Hydro Power Plant Improvement, City of Ashland, Ashland, OR – Lead design engineer and project manager for the replacement of the switchgear and control system for the City's Reeder Gulch hydro power plant. Design included a fully automated autosynchronizing system and complete generator protection system. Designed and integrated a SCADA system utilizing the City's existing fiber optic network integrating substation IEDs, hydro generation controls, and remote capacitor banks. Provided analysis and settings for feeder sectionalizing with new reclosers for the power plant tie. Developed commissioning plans and served as lead commissioning engineer.

Power System Study, Providence St. Vincent Medical Center, Portland, OR – Lead engineering for an arc-flash hazard and short circuit study for normal and emergency systems for the Providence St. Vincent Medical Center

Campus including Critical Care, West Pavillion, Main Hospital, East Tower, Surgery Tower, and East Pavilion buildings. The study involved the development, field verification, and analysis of an 800 bus model in SKM software.

Backwash Pond System Improvements, Canby Utility Board WTP, Canby, OR – Lead systems integrator for the integration of new backwash pond controls, river intake pumping, raw water quality, washwater control, and remote pump station controls. Included Cimplicity HMI programming, GE Series 90-30 PLC programming, Horner PLC and touchpanel programming, wireless network integration, and replacement autodialer system.

Condon Substation and 115kV Conversion Project, Columbia Basin Electric Cooperative, Heppner, OR – Project engineering in a conversion project to increase transmission voltage from 69kV to 115kV. Project included replacement of Condon Substation transformer and backfeed of Snipion Substation. Represented the utility at factory witness testing at the transformer manufacturer facility. Provided replacement substation relaying design and assisted with replacement circuit switcher and transmission line design.

SCADA System Integration, Consumers Power Inc., Philomath, OR – Provided SCADA system integration and design for Wonderware control system. Integrated multiple IED platforms and maintained the SCADA system covering the complete utility system. Integrated new, motor operated transmission disconnects and new Lebanon Substation relays.

Power System Study, Hickam Air Force Base, HI – Lead engineer for the performance of a complete power system study including short circuit evaluation, protective device coordination, load flow analysis, and arc-flash hazard analysis on a newly constructed C17 hangar and maintenance shop.

Motor Start Analysis, Columbia Basin Electric Cooperative, Inc., Heppner, OR – Provided computer modeling of the distribution system under multiple scenarios for motor start evaluation and power flow analysis. Provided feeder improvement recommendations to allow anticipated system growth.

Water Treatment Plant Expansion, Canby Utility Board WTP, Canby, OR – Lead systems integrator for the Water Treatment Plant Expansion project and Backwash Pond project with responsibilities including programming GE Series 90-30 PLCs, Horner PLCs, PLC communications with GE Proficy Machine Edition, and HMI programming and screen development with GE Cimplicity HMI. Provided startup and testing assistance including PID loop tuning and troubleshooting with closed loop control of high service pump VFDs.

Representative Projects at Electrical Systems Analysis

Generator Power Quality Analysis, Vestas-American Wind Technology, Portland, OR – Field engineer, performed data collection and analysis for wind turbine generators determining generator characteristics and measuring characteristic harmonics of operating turbines. Project engineer in a laboratory analysis of failed capacitor banks.

EasyPower Software Analysis Instructor, Various – Provided classroom instruction to engineers on the use of EasyPower software for building system models and performing short circuit, coordination, load flow, and arc flash analysis. Provided instruction for open enrolled classes in various locations as well as custom site instruction for PPL in Butte, Montana, Colonial Pipeline in Alpharetta, Georgia, and Boise Cascade in DeRidder, Louisiana.

Power System Analysis, Century Aluminum, West Virginia – Project engineer, coordinated field data collection, developed EasyPower model, and performed analysis for a power system study including arc-flash analysis for the Century Aluminum plant in West Virginia.

Power System Analysis, NEGT Salem Harbor, Salem, Mass – Project engineer, coordinated field data collection, developed EasyPower model, and performed analysis for a power system study including arc-flash analysis for the NEGT Salem Harbor power plant in Salem, Massachusetts.

Power Factor and Capacitor Bank Placement Study, City of Milton-Freewater, OR – Project engineer, developed system models of the City of Milton-Freewater 12.47kV distribution system. Modeled system loading and power factor correction capacitor bank placement impacts for correction and voltage effects.

Evaluation of IEEE 519 Compliance at Maher Terminal, Rockwell Automation, Maher Terminal, NJ – Served as project engineer for the field data collection and harmonic analysis of DC drives on Maher Terminal cranes. Analyzed system loading conditions, IEEE 519 compliance, and voltage distortion at 26kV point-of-common-coupling.

Substation Relay Replacement, City of Milton-Freewater, OR – Served as lead project engineer for the design, integration, and programming of replacement substation feeder relays from older electromechanical relays to modern microprocessor based SEL351S relays.

SCADA System Integration, Canby Utility Board, Canby, OR – Lead engineer providing innovative SCADA system integration for the substation automation control system including fiber optic system interfacing with Intelligent Electronic Devices (IEDs), IED programming and configuration, report generation, time synchronization, and WonderWare Human Machine Interface (HMI) configuration.

Municipal SCADA System Replacement, City of Milton-Freewater, OR – Served as lead project engineer for the design and integration of a complete distributed SCADA control system for the upgrade of the City's Electric and Water systems utilizing an Ethernet backbone on a fiber optic network. Provided computer simulation modeling of distribution feeders and customer motors for the determination of motor starting effects on system parameters. Coordinated and programmed substation distribution breaker controllers and transformer protection relays.

Interconnection Study, Boise Cascade, Medford, OR – Project engineer, developed one-line diagrams of the plant electric distribution system and assisted in the completion of a small generating facility interconnection request for interconnection with the Pacific Power and Light distribution system.

Power System Analysis, Alcoa Corporation – Intalco Works, Ferndale, WA – Project engineer, performed computer calculations for Arc Flash hazard determination and Personnel Protective Equipment (PPE) requirements for the electric distribution system of a large aluminum smelter facility.

Power System Analysis, Georgia Pacific, Camas, WA – Lead engineer for a short circuit, coordination, and arc-flash study of the Camas Mill in Camas, Washington. The study involved the development of an over 400 bus model and the analysis of electrical equipment from 69kV down to 208V.

Power System Analysis, Hawaiian Commercial and Sugar Company, Maui, HI – Project engineer, provided computer simulation of high, medium and low voltage systems for power flow and short circuit analysis of the HC&S power distribution system. Created Time Coordination Curves (TCCs) for the coordination study of all major breakers and relays.

Generation Intertie Relaying, Roseburg Forest Products, Roseburg, OR – Project engineer, programmed and interfaced the cogeneration plant Siemens meters and the intertie SEL-311C relays. Provided computer simulations evaluating system alterations and providing updated short circuit study data.

Power System Analysis, City of Blaine, Blaine, WA – Project engineer, provided a computer model of the City's distribution system for load flow and motor starting analysis, and for protective device coordination.

Jiajia Song, Ph.D., P.E.
Senior Electrical Engineer



Education

Ph.D. in Electrical Engineering, Oregon State University
B.S. in Electrical Engineering, Zhengzhou University of Aeronautics, China

Professional Engineering Registration

Oregon	90661PE
Washington	20110017
California	E24431
Texas	138215

Work Experience

Mr. Song is a Senior Electrical Engineer at Stoddard Power Systems with more than ten years of experience in engineering research, analysis, and design of electrical systems from transmission down to distribution levels. He is the lead engineer in the engineering analysis group. Prior to joining Stoddard Power Systems, Mr. Song worked at OS Engineering/Olsson Industrial Electric as an Electrical Engineer directly after graduating from Oregon State University in 2015. During his time at OS Engineering, his roles and responsibilities mainly focused on designing utility and industrial electrical systems, power system studies (including arc-flash, short circuit, load flow, protective protection, harmonic analysis, transient studies, and NERC PRC compliance analysis), system planning and feasibility studies, and site investigation and data collection.

Mr. Song also worked as a Research & Teaching Assistant at Oregon State University from 2010 – 2015. His research specialized in dynamic modeling of power system cascading outages and mitigation schemes, energy storage, and PMU placement in various applications. Mr. Song has published multiple technical papers in IEEE journals and conferences.

Representative Projects

VERA Water and Power, 16th Avenue Substation, Spokane, WA – Project engineer participating in the transformer and circuit switcher control schematic, station service, protective setting, and control panel design.

Columbia Basin Electric Coop., Fossil Substation, Heppner, OR – Project engineer participating in the transformer and circuit switcher control schematic, station service, protective setting, and control panel design.

Columbia Basin Electric Coop., Sand Hollow Substation, Heppner, OR – Project engineer participating in substation structure and foundation, transformer and circuit switcher control schematic, station service, protective setting, and control panel design.

Providence St. Vincent Medical Center, Power System Study, Portland, OR – Project engineer for an arc-flash risk assessment and short circuit study for both normal and emergency scenarios. The study includes field data collection, model development & verification in SKM, analysis, and reporting the findings such as code violation, protective device miscoordination, over-duty equipment, etc.

Oregon State University, Corvallis, OR – Project engineer for an arc-flash risk assessment and short circuit study. The study includes field data collection, model development & verification in EasyPower, analysis, and reporting findings such as code violation, protective device miscoordination, and over-duty equipment.

Old Castle Materials, River Bend Sand and Gravel, Salem, OR – Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Old Castle Materials, Eugene Sand and Gravel, Eugene OR – Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

ATI Cast Products, Building H, Salem, OR – Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

LSQ System Study, USACE, The Dalles Dam – Project engineer for an arc-flash risk assessment and short circuit

study for various scenarios. The study includes data collection, model development & verification in SKM, analysis, and reporting the findings such as code violation, protective device miscoordination, over-duty equipment, etc.

Seneca Sawmill, Eugene, OR — Project engineer to provide engineering support for arc-flash risk assessment and protective device coordination settings while the project progresses.

57th St. Pump Station, Springfield Utility Board — Project engineer for electrical distribution design of the pump station.

Hamlin Pump Station, Springfield Utility Board — Project engineer for electrical distribution design of the pump station.

Harmonic Analysis (IEEE 519 Compliance) at FSQ2, USACE, John Day Dam — Project engineer for a harmonic analysis of three 450 hp VFDs in order to confirm that the voltage and current distortions caused by the drives are within the acceptable limits that are specified in IEEE Standard 519.

75MW PV Farm Feasibility Study, Columbia Basin Electric Coop., Heppner, OR — Project engineer for an analysis of interconnecting feasibility for adding a large-scale Photovoltaic (PV) generation facility into the Columbia Basin Electric Cooperative's (CBEC's) transmission system.

10MW PV Generation Interconnect Analysis, City of Ashland, OR — Project engineer for an analysis of interconnecting feasibility for connecting a large-scale Photovoltaic (PV) generation facility into the City's existing electrical distribution system. This engineering investigation evaluated integrating photovoltaic systems with different generation outputs ranging between 2.5 MW and 10 MW.

Grain Millers, Eugene, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Van's Aircraft, Aurora, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Northern Gold Foods, Junction City, OR — Project engineer to support the industrial power distribution design for a large food processing plant in compliance with NEC and NESC codes.

MGC Pure Chemicals, Forest Grove, OR — Project engineer to support the industrial power distribution design for a Mitsubishi chemical processing plant in compliance with NEC and NESC codes.

NORPAC Foods Inc., Brooks, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

SENECA Sawmill, Noti, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Weyerhaeuser TOPS Facility, Springfield, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Weyerhaeuser Snow Peak, Lebanon, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Montpelier Generating Station, Montpelier Indiana — NERC PRC-025-2 and PRC-027-1 compliance evaluation of the Montpelier station to verify the load-responsive protective relay settings provide the desired protection while meeting NERC PRC requirements.

Panda Hummel Station, Selinsgrove, Pennsylvania — NERC PRC-025-2 and PRC-027-1 compliance evaluation of the Hummel station to verify the load-responsive protective relay settings provide the desired protection while meeting NERC PRC requirements.

Tejas Power Generation Station, Houston, Texas — NERC PRC-019-2, PRC-024-3, PRC-025-2, and PRC-027-1 compliance evaluation of the Tejas station to ensure the generator capability, voltage and frequency controls and

protection, and protective relay loadability and coordination comply with NERC PRC requirements.

Shell Polymers, Monaca, Pennsylvania – NERC PRC-024-3, PRC-025-2, and PRC-026-1 compliance evaluation of the Shell Polymers power station to ensure generator voltage and frequency controls and protection, protective relay loadability, and the relay performance during power swing events comply with NERC PRC requirements.

Franz Bakery, Springfield, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Springfield Utility Board, Springfield, OR - Project engineer for a power system study of their water facilities including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Rainbow Water District, Springfield, OR - Project engineer for a power system study of their water facilities including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Genesis HealthCare, Mose Lake, WA - Project engineer for a power system study of the Columbia Crest Center including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

City of Drain, OR - Project engineer for a system planning study and arc-flash study of their electrical distribution system to ensure that the City's electrical system has the operational capacity, reliability, and flexibility to meet long-term planning criteria, as well as arc-flash exposures of their major facilities.

Pleasant Valley Compressor Station, Centerville, VA - Project engineer for reliability analysis of motor fast bus-transferring, including options of transferring sources at 13.8 kV or 480 V.

Readiness Center, Tri-City, WA – Project engineer to support the commercial power distribution design for a military readiness center in compliance with NEC and NESC codes.

Stella Jones, Tacoma, WA - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

WR Grace, Albany, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Lafarge, Eugene, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Parker Hannifin, Eugene, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Seneca Sawmill, Eugene, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Seven Feathers Casino, Canyonville, OR - Project engineer for a power system study including data collection, modeling, arc-flash risk assessment, short circuit study, and equipment duty analysis for various scenarios.

Newark Energy Center, Newark, NJ – NERC PRC-019-2 and PRC-024-3 compliance evaluation of the Newark facility to ensure properly coordinated voltage protective system settings, generating unit controls, limit functions, and equipment capabilities per the requirements of NERC PRC-019-2 and PRC-024-3.

Green Country Energy, Jenks, OK – NERC PRC-019-2 and PRC-024-3 compliance evaluation of the Green Country facility to ensure properly coordinated voltage protective system settings, generating unit controls, limit functions, and equipment capabilities per the requirements of NERC PRC-019-2 and PRC-024-3.

Jerry D. Witkowski, P.E.
Senior Electrical Engineer



Education

B.S. in Electrical Engineering, Oregon State University

Professional Engineering Registration

Washington 30577,
Oregon 16733PE,
California B14639, Idaho 7872,
New Mexico 13273

Work Experience

Mr. Witkowski has been providing electrical utility, industrial design and study services for the past 38 years. His design involvement includes detailed design, project management and lead engineering experience in transmission, substation, and overhead/underground distribution systems. He has unique underground design experiences which include multiple circuit arrangements up 6 miles in length, and distinctive aspects such as, routes paralleling and crossing scenic highways, I-5 crossings, river crossings, railroad crossings, bridge crossing, unique bore and casing crossings, wetland and cultural conditions requiring archeological on-site excavation investigations.

He has also provided many unique design services including special grounding applications, SCADA systems, var control, system voltage conversions, and various co-generation interconnection designs. His engineering services have included technical specification and contract document preparation, contract review, award recommendations, cost estimating, construction scheduling, management and on-site resident services. He has also performed many electric utility system planning studies, system analysis, and protection studies, plus various specialized studies for utility and industrial clients. These studies typically contain the following tasks: growth forecasts, existing system evaluation, establish design criteria, system power flow and short-circuit analysis, protective device coordination, improvement alternatives, recommendations and improvement plans, plus associated costs estimates.

Representative Projects (Reduced, additional examples available upon request)

Tahoe- Donner Association, Truckee-Donner, PUD: Underground Feasibility Study, Truckee, CA – This project although completed in 2006, is very similar to The Dalles Utility Undergrounding Feasibility Study described in the NWCPUD RFP. This work involved determining an approach to underground all utility overhead infrastructure in a heavily wooded mountainous area adjacent to the Tahoe National Forest consisting of over 7,000 homes, and local commercial facilities. The overhead facilities included the PUD's electric primary, secondary and service circuits, two communication company facilities and the utility's SCADA system. The work involved determining underground design plan and elevation configurations without interfering with existing below grade infrastructure, cost estimates, construction phases and scheduling, complications, cost sharing and potential approaches to funding.

Dufur Substation and System Voltage Conversion, City of Dufur, OR – NWCPUD

Performed design, contract documents and technical specifications for the substation voltage conversion and upgrade which included major equipment and Contractor award, field construction inspection, and startup services. Substation equipment was arranged with a flexible switching open-rack outdoor configuration. All components and control systems utilized modern state-of-the-art technology. This project included design and sequencing for voltage conversion of the entire Dufur community.

West 2nd Street Substation, City of the Dalles, OR – NWCPUD

Performed design, contract documents and technical specifications for the substation new control house and relay/control conversion, which included major equipment and Contractor award, field construction inspection, and startup services.

Substation and Transmission Line Design, Columbia Ridge Substation, WA – Prepared substation and transmission line design for a Waste Management Columbia Ridge 25 MW gas- to-energy co-generation facility to interface with CBEC/BPA, including the 115 kV x 4.16 kV substation design with a connection to the generator facility and 4 miles 115 kV pole design to interconnect with CBEC and BPA.

Mountain Avenue Substation Distribution Rack Design, City of Ashland, Ashland, OR – Performed design for the expansion of the City of Ashland, Mountain Avenue Substation distribution rack including site-work, structure details, sectionalizing devices and controllers, control house modifications and feeder getaways. Services included controller configuration, settings and programming in addition to SCADA system configuration to implement fiber-optic communications. The project included complete contract document preparation with technical specifications for material procurement and construction.

City of Milton-Freewater, Milton Substation, Milton-Freewater, OR – Performed design for the expansion of the Milton Substation including site-work, structure details, sectionalizing devices and controllers, control house modifications and feeder getaways. Services included controller configuration, settings and programming in addition to SCADA system modifications. The project included complete contract document preparation with technical specifications for material procurement and construction.

Monmouth Power and Light South Substation Getaways and OR99W Underground Projects, Monmouth, OR – Performed design for six underground 15 kV substation feeder getaways, including four miles of congested underground routed circuit detail ductbank and vaults design, with contract documents and technical specifications for Contractor construction. More recently performed design for approximately one (1) mile of multiple conduit underground 15 kV feeder circuits along State Highway OR99W and through the congested Monmouth downtown commercial area. The work included underground circuit detailed ductbanks and vaults designs, with contract document preparation consisting of drawings and technical specifications for bidding purpose, cost estimates and contract award.

Canby Utility Westcott Substation and Knights Bridge Substation Projects, Canby, OR – Performed design, contract document and technical specifications preparation for Owner furnished equipment and Contractor award, site inspection, and startup services for the 115-57 x 12.47/7.2 kVA Westcott Substation consisting of two 20/26.7/33.3 MVA transformers, feeder regulation, and ten getaway feeders. Substation equipment arrangement was a traditional outdoor configuration, consisting of main and transfer bus with considerable switching flexibility. All components and control systems utilized modern state-of-the-art technology, allowing the non- traditional implementation of substation monitor/control functions. Performed design, contract document and technical specifications preparation for Owner furnished equipment and Contractor award, site inspection, and startup services for the 115-57 x 12.47/7.2 kVA Knights Bridge Substation consisting of a 20/26.7/33.3 MVA transformer, feeder regulation, and five getaway feeders.

16th Avenue Substation Project, Vera Water and Power, Spokane Valley, WA – Prepared 20-Year Long Range System Planning Study, after which prepared design, contract documents and technical specifications for Owner furnished equipment and Contractor award, field construction inspection, and startup services for the 115 x 13.8/7.9 kVA 16th Avenue Substation consisting of a 20/26.7/33.3 MVA transformer, regulation, and five getaway feeders. Substation equipment was arranged with flexible switching open-rack outdoor configuration. All components and control systems utilized modern state state-of-the-art technology. The site was arranged so that the substation could be expanded to add a second transformer bank and distribution rack.

Columbia Basin Electric Cooperative, Heppner, OR – Prepared 10-Year Long Range System Planning Study, followed by design, contract document and technical specifications for upgrades of CBEC Sniption Switch Station, Condon, Fossil, Sand Hollow and Ruggs substations, consisting of transformer replacement, circuit switcher and by-pass configuration construction and protection/metering/control and modular control building upgrades. The project included completed contract document preparation with technical specifications for material procurement and construction. The Condon upgrade included a 10-mile 115 kV steel pole design with interconnection to BPA.

City of Ashland Hersey Street Underground Project, Ashland, OR – Following the preparation of a 10-Year Planning Study performed design for approximately 1.5 miles of multiple conduit underground 15 kV feeder circuits from the Mountain Avenue Substation along Hersey Street to N. Main Street, a busy residential and commercial area. The work included underground circuit detail ductbanks and vault designs with contract document preparation consisting of drawings and technical specifications for bidding. Also prepared cost estimates and assisted with Contractor award.



COST PROPOSAL FOR ELECTRICAL SYSTEM MASTER PLAN

For City of Ashland, Oregon

Date: 06/23/2023

By: 
Martin Stoddard, President
Stoddard Power Systems

Original Copy

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SECTION 1: Fee Schedule 1

SECTION 1: FEE SCHEDULE

Based on the discussed Scope of Work in the Technical Proposal, we propose to perform the 10-year planning study or electrical master plan development on time and materials not to exceed a total of \$78,159 for the base project.

Since the City obtained Mountain Avenue Substation recently, as an optional item, SPS can provide a two-day of substation training for an adder of \$9,800 including training materials.

Compensation will be on the basis of actual hours worked and shall not exceed the cost estimate indicated without written authorization from the City. The cost estimate is based on the following tasks:

Table 1: Cost Estimate

Task	Est. Cost
Base Project Total • Data Collection • Load Forecast • System Planning Criteria • Transmission and Substation Evaluation • Analysis of the Existing System • Major Equipment Inventory Review and Replacement Schedule • Other Considerations from Renewable Energy Resource Addition, Increased EV Charging Demand, Climate & Energy Action Plan, and Wildfire Mitigation Plan. • Power Flow Analysis • Short Circuit Analysis • Protective Device Coordination • Prepare Electric System Study Report	\$78,159
(OPTIONAL) Onsite Substation Training, including the following topics: • Substation configuration • Transmission interface and primary equipment • Power transformer • Voltage regulator • Auxiliary system • Monitoring and Protection (Transformer and Feeder) • Grounding • Operation and maintenance	\$9,800

- NOTES:
- 1) The engineering rate schedule is enclosed in Appendix A of the Tech Proposal.
 - 2) This base cost estimate covers all tasks listed in the scope of work.
 - 3) No sub-consultant was considered in the above cost estimate.

EXHIBIT B

Certificate of Compliance

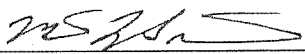
Compliance with Oregon Tax Laws:

In compliance with OAR 137-047-0260(2)(e), I hereby attest or affirm under penalty of perjury: That I am authorized to act on behalf of the proposer in this matter, that I have authority and knowledge regarding the payment of taxes, and that contractor is, to the best of my knowledge, not in violation of any Oregon Tax Laws, as defined in ORS 305.380.

Compliance with Nondiscrimination Laws:

In compliance with ORS 279A.110(4), OAR 137-046-0210(2) and OAR 137-047-0260(2)(a)(E), I hereby attest or affirm under penalty of perjury that I am authorized to act on behalf of proposer in this matter, and to the best of my knowledge the proposer has not discriminated and will not discriminate, in violation of ORS 279A.110(1), against a minority, women or emerging small business enterprise certified under ORS 200.055 or against a business enterprise that is owned or controlled by or that employs a disabled veteran as defined in ORS 408.225 in obtaining a required subcontract.

Corporate Officer:

By: 
Signature

Martin Stoddard
Print Name

Title: President/Principle Engineer

Date: 06/23/2023



Council Study Session

December 4, 2023

Agenda Item	Water & Enterprise System Utility Rates and Affordability		
From	Scott Fleury PE	Public Works Director	
Contact	Scott.fleury@ashland.or.us		
Item Type	Requested by Council ☐ Update ☐ Request for Direction ☒ Presentation ☐		

SUMMARY

Before Council is an update on water rate forecasting for the current biennium with the six year look ahead. The water rate analysis was performed by Hansford Economic Consulting using the current budget and capital planning documents. The update accounts for the projected debt required to construct the new Water Treatment Plant using the Environmental Protection Agency (EPA) Water Innovation and Infrastructure Financing Act (WIFIA) funding mechanism.

This update also includes background and previous information discussed by Council regarding utility rate affordability and applying a metric to the overall cost of utilities for community members in order to make holistic decisions about rate increases for the enterprise funds that are within the Council's purview.

POLICIES, PLANS & GOALS SUPPORTED

VISION STATEMENTS for Success:

- *Ashland is a resilient, sustainable community that maintains the distinctive quality of place for which it is known*
- *We will continue to be a unique and caring city that stresses environmental conservation, fosters artistic expression, and is open to new ideas and innovation*
- *We will plan and direct our efforts to fulfill this Vision for the long term with a constant view toward being an open, welcoming community for all with a positive economic future*

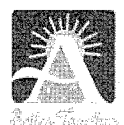
VALUE STATEMENTS for Success that Support the Vision:

COMMUNITY

- Community affordability, including in available housing and childcare
- Belonging through mutual respect and openness, inclusion and equity
- Quality of life that underpins the City's economic vibrancy
- Environmental resilience, including addressing climate change and ecosystem conservation
- Regional cooperation, including in support for public safety and homelessness

ORGANIZATION

- Respect for the citizens we serve, for each other, and for the work we do
- Excellence in governance and city services
- Sustainability through creativity, affordability and rightsized service delivery
- Public safety, including emergency preparedness for climate change risk





Council Study Session

- **Quality infrastructure and facilities through timely maintenance and community investment**

PREVIOUS COUNCIL ACTION

Typically the Council approves rate adjustments for the enterprise systems annually with the last rate adjustment approved on June 4, 2019.

June 4, 2019 Meeting Minutes

June 4, 2019 Staff Report

BACKGROUND

Water Utility Fund Proposed Rate Increases

The water rate analysis proposes 10% increases for the next few years to account for projected expenses within the fund including the new water treatment plant.

For reference, the Water Fund along with other enterprise funds have seen significant cost increase in goods and services, construction and personal costs since 2019. The construction cost using Portland indexing has increased 31.7% from quarter 1 of 2019 to quarter 3 of 2023, reference figure 1 below. Audited personal expenses have increased 5.7% from 2019 through 2022 as shown in table A-2 of the Water Rate Technical Memorandum and staff expects this to significantly increase moving forward as the Water Divisions, specifically distribution have suffered from staffing shortages over the past few years and currently all divisions are fully staffed.

The City is making a large capital investment in the treatment plant that will ensure a sustainable and secure water supply into the long term, which shows forward planning at a time when many communities are not investing in their water infrastructure; in addition, the City is working with TAP partners to ensure the secondary resilient source of water for emergencies and drought-year water supplies, and investing in infrastructure that will allow the sale of Ashland's water to TAP partners during the winter when Ashland has an excess of water supplies. Ashland's costs are high now because of the infrastructure investments it is making.





Council Study Session

Figure 1: Construction Cost Index

Overall Construction Cost Index Q3 2023

(JANUARY 2009 = 100)

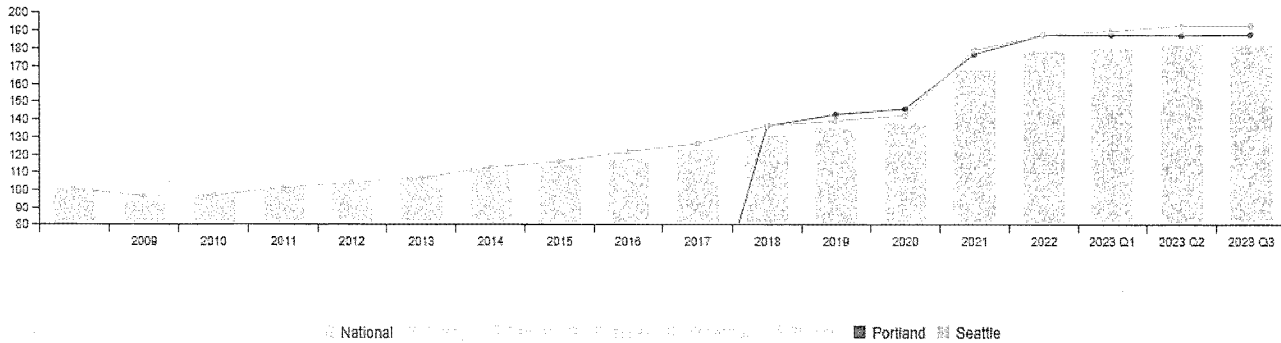
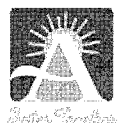
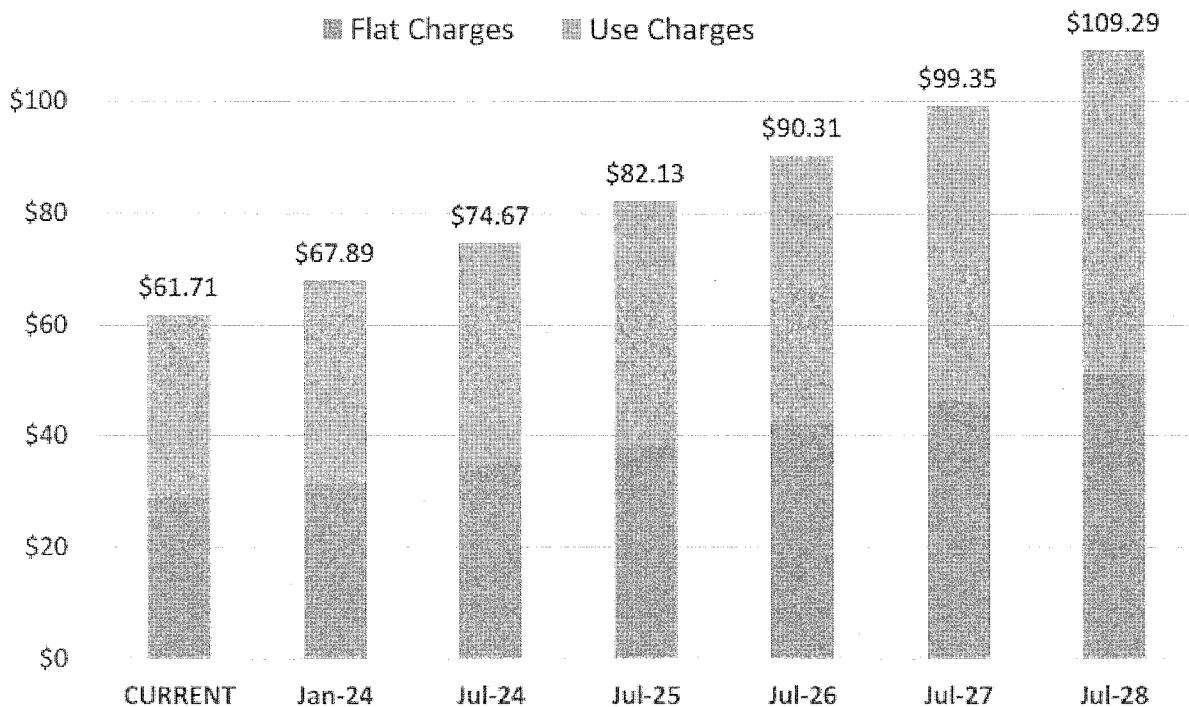


Figure 2 shows the projected charges for the water utility considering the six year forecasted spending. The typical monthly residential water rate is based on a water use of 1000 cubic feet (7,480 gallons/month, 250 gallons per day per household).

Figure 2: Water Rate Impacts
Single Family Home Bill for 1,000 cubic feet





Council Study Session

Water Treatment Plant Project Funding

City staff is still coordinating with PFM the City's Financial Consultant along with the Bond Attorneys from Hawkins to review the proposed loan agreement with the Environmental Protection Agency (EPA) and develop the Master Declaration required to utilize the EPA's WIFIA Funding program for the project.

To proceed forward with the WIFIA program for funding of the project, the Council was required to approve a borrowing resolution, which was done at the September 20th, 2022 Business Meeting:

September 20, 2022 Water Bond Resolution Staff Report

September 20, 2022 Meeting Minutes

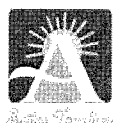
When the City first applied for WIFIA funding through the EPA the project cost used was much lower than currently anticipated and the City was assuming an 80/20% split with WIFIA funding 80% of the project and the remaining 20% coming from another funding source. In coordination with the EPA since approval of the original bond resolution, it was determined that 100% of the construction costs could be funded through the WIFIA program due to the in-kind match and previously incurred eligible expenses provided by the City. These matching funds and previous expenses include the value of the parcel where the plant will be constructed and engineering/planning expenses to date. The EPA has determined the maximum eligible loan amount considering the in-kind match is \$75,730,172.

The Bond Resolution previously approved by Council did not consider the increase to project costs and also availability of full WIFA funding for the project. Thus, a new bond resolution will be required to be approved by Council as staff moves towards loan closing. Staff expects to bring an updated resolution to Council in January for discussion and approval.

WIFIA Process Steps:

1. Develop and Approve Water Revenue Bond Resolution (Completed, but needs to be redone)
2. Post Public Notice of Water Revenue Bond Resolution (Completed but needs to be redone)
3. Obtain Indicative Credit Rating and Preliminary Plan of Finance (Completed)
4. Complete WIFIA Loan application (Completed)
5. Submit Application to EPA (Completed)
6. Develop water revenue and rate forecast (Completed)
7. Finalize Plan of Finance and Obtain Final Credit Rating (In process)
8. Negotiate Final Terms and Conditions for Borrowing with EPA (in process)
9. Close Loan (Anticipated April/May 2024)

In May of this year, HDR updated the opinion of construction costs to match the 90% design level the project current is at reference table 1 below. Currently the opinion of cost for the construction of the plant ranges from a high of \$70,424,000 to a low of \$55,115,000. This opinion of cost also includes contingency, escalation and market volatility factors.





Council Study Session

Table 1: Water Treatment Plant Opinion of Cost

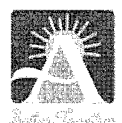
Cost Summary

Summary of Opinion of Probable Construction Cost		
High Range		Low Range
+15%	WTP Construction Costs	-10%
\$ 70,424,000	\$ 61,238,000	\$ 55,115,000
Summary of Opinion of Probable Construction Cost		
High Range		Low Range
+15%	Solar Array Construction Costs	-10%
\$ 2,458,000	\$ 2,137,000	\$ 1,924,000
Summary of Opinion of Probable Construction Cost		
High Range		Low Range
+15%	BESS Construction Costs	-10%
\$ 3,063,000	\$ 2,663,000	\$ 2,397,000

In an attempt to directly offset project costs staff has applied for Bipartisan Infrastructure Law (BIL) grant funding given to the State of Oregon for communities with emerging contaminants. The City of Ashland is listed with the State for emerging contaminants, specifically for algal toxins. Staff is also coordinating with the Evan Brooks Associates on other grant funding opportunities for the plant and other enterprise capital projects defined in the six year Capital Improvement Plan.

Wastewater Utility Fund Proposed Rate Increase

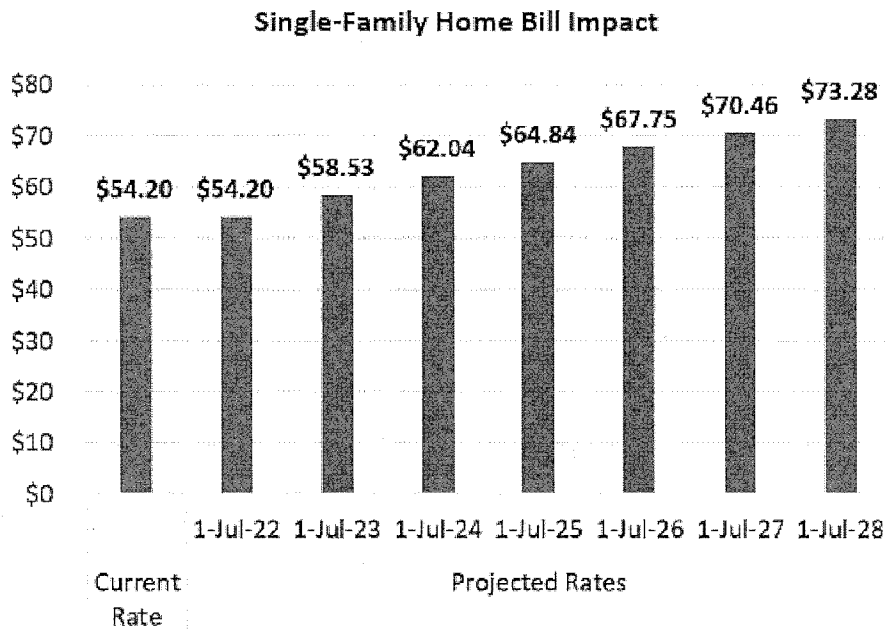
The projected rate increase for the Wastewater fund was developed as part of the financial analysis contained within the recently adopted Collection System Master Plan. This analysis accounts for costs associated with both the Treatment and Collections funds for wastewater. The average wastewater rate is based on the 600 cubic feet of wastewater (sewer) usage. There was no rate increase applied in 2023 as developed in the financial analysis section of the master plan. Figure 3 shows the project rate structure through 2028.





Council Study Session

Figure 3: Wastewater Rate Impacts

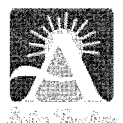


Storm Drain Utility Fund Proposed Rate Increase

The proposed storm drain rate increase for 2024 is 7%. The last rate increase enacted in the storm drain fund was in 2022 and 9%.

Table 2: Storm Drain Rate Impacts

Across-the-Board Rate Schedule	Existing 2020	ATB 2021	ATB 2022	ATB 2023	ATB 2024	ATB 2025	ATB 2026	ATB 2027	ATB 2028	ATB 2029
Annual System-Wide Rate Increase		0.00%	9.00%	9.00%	7.00%	6.00%	6.00%	6.00%	5.00%	4.00%
Monthly Storm Drainage Fee										
Single Family (per residence)	\$4.99	\$4.99	\$5.44	\$5.93	\$6.34	\$6.72	\$7.13	\$7.56	\$7.93	\$8.25
Condominium 1-9 Units (per unit)	2.14	2.14	2.33	2.54	2.72	2.88	3.06	3.24	3.40	3.54
Multi-Family 1-9 Units (per unit)	2.14	2.14	2.33	2.54	2.72	2.88	3.06	3.24	3.40	3.54
Mobile Home and Trailer 1-9 Units (per unit)	2.14	2.14	2.33	2.54	2.72	2.88	3.06	3.24	3.40	3.54
Other (per 1,000 sq. ft. of impervious surface area)	1.66	1.66	1.81	1.97	2.11	2.24	2.37	2.51	2.64	2.74
Minimum Charge										
Residential Accounts	\$4.99	\$4.99	\$5.44	\$5.93	\$6.34	\$6.72	\$7.13	\$7.56	\$7.93	\$8.25
Commercial Accounts	4.99	4.99	5.44	5.93	6.34	6.72	7.13	7.56	7.93	8.25





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Affordability

The Council has discussed metrics associated with affordability as part of an overall decision making process associated with utility rates. A common standard in budgeting is to account for 6-10% of your income to be associated with monthly utilities. From Census data the 2021 median income for Ashland is \$63,641/annually or \$5,303/month.

Staff has developed the tables below showing the overall utility cost and associated median income level. Table 3 shows the cost of each utility on a month basis along with the percentage of monthly income tied to each utility in the current condition. Generally, over 2% per utility is considered "high" and over 2.5% is considered burdensome. The tables below show the general overall utility bill impact including City utilities and franchise related utility costs (natural gas, trash)

Table 3: Utility Affordability Current

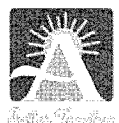
Utility Bill Affordability Analysis

2021 Median Household Income \$ 5,303.42

2% of Median Household Income Per Utility

Last Update	Utilities	Monthly Rate	% of Median Income
2019	Street Utility Fee	\$ 9.56	0.18%
2021	Storm Drain Utility Fee	\$ 5.44	0.10%
2019	Wastewater (average)	\$ 54.20	1.02%
2019	Water (average)	\$ 61.71	1.16%
2021	Electric (average)	\$ 76.88	1.45%
2021	Ashland AFN	\$ 65.00	1.23%
2022	Recology	\$ 22.67	0.43%
N/A	Natural Gas	\$ 56.00	1.06%
	Totals	\$ 351.46	6.63%

Table 4 shows the projected utility cost and overall percentage against the median income level with all of the rate increases currently projected via a rate study or financial analysis completed as part of the master planning process.





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Table 4: Utility Affordability Projected

Projected Update	Utilities	Monthly Rate	% of Median Income
2023 (3%)	Street Utility Fee	\$ 9.85	0.19%
2024 (7%)*	Storm Drain Utility Fee	\$ 5.82	0.11%
2024 (6%)**	Wastewater (average)	\$ 57.45	1.08%
2024 (10%)**	Water (average)	\$ 67.88	1.28%
2023	Electric (average)	\$ 76.88	1.45%
2023	Ashland AFN	\$ 65.00	1.23%
2022	Recology	\$ 22.67	0.43%
N/A	Natural Gas	\$ 56.00	1.06%
	Totals	\$ 361.55	6.82%

*Projected in the adopted Storm Drain System Master Plan (July 1, 2024)

**Projected in the adopted Collection System Master Plan (July 1, 2024)

***Projected in October 2023 Water Rate Analysis

Table 5 comes directly from the Water Rate Memorandum and shows the specific relation of water rates to median household income.

Table 5: Water Rate Study Affordability

Impact of Rates on Household Affordability

Item	Annual	Monthly
Oregon Median Household Income (MHI) [1]	\$70,084	\$5,840
Ashland MHI [1]	\$63,641	\$5,303
CURRENT Water Bill 3/4" using 1,000 cu. ft.	\$741	\$61.71
Water Bill as % of Ashland MHI		1.16%
January 2024 Water Bill 3/4" using 1,000 cu. Ft.	\$815	\$67.89
Water Bill as % of Ashland MHI		1.28%
Water Rates @ 2.0% of MHI [2]	\$1,273	\$106.07

Source: US Census.

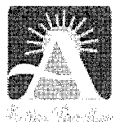
[1] 2021 5-year American Community Survey estimate.

[2] Per EPA guidelines a typical water bill greater than 2% is high and a typical water bill greater than 2.5% is burdensome.

As shown in the tables the total billing still falls within the affordability metrics previously discussed by Council.

Cost of Service

The Council has also shown interest in a more progressive water rate structure and in order to create a new structure or update the current tiered system it is recommended to update the 2016 Cost of Service





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Study. The water rates analysis also makes the same recommendation. Staff estimates this study will cost approximately \$50,000 and will need to be lead by a consulting firm. There are funds available in professional services for the biennium to perform such a study if directed by Council.

Low Income Assistance Program

As part of the scope of work for utility rate analysis, Hansford Economic also analyzed the current utility assistance program and developed a memo on recommendations reference attachment #2.

Staff has discussed these recommendations with Isleen Glatt, Senior Services Superintendent, who works with many individuals who participate or try to participate in the program. The main concern is modifying the income level and age restriction requirements in order to give more access to the programs for community members.

In review of the work Hansford performed Isleen made the following recommendations to be considered as well:

The current program uses 100% or 125% of Federal Poverty Levels as the criteria, but this is an extremely low income by Oregon cost of living and housing. Often times low-income seniors who are interested in the program make just a little too much to qualify for assistance. Medicaid, which is very hard to qualify for, uses 138-150% of Federal Poverty. Most low-income programs in our area use 150-200% of Federal Poverty. I recommend adopting 150% and 200% for our senior utility discount, or the equivalent income level using local median income standards, as used in the City's ALIEP benefit and Affordable Housing Program.

FISCAL IMPACTS

The City contracted with Hansford Economic Consulting for \$27,750 to perform the water rate analysis and also review and make recommendations regarding the City's current low income assistance program. To date \$23,803 has been expended towards the contract amount.

The 2023-2025 Biennial Budget proposed rate increases support the overall funds including personnel, operations, capital and debt expenses. The proposed rate increases relate to anticipated revenues to offset expenditures within the enterprise utility. Should the Council not want to move forward with adoption of rate increase to support projected expenses, offsetting reductions in expenditures must be made.

DISCUSSION QUESTIONS

Does the Council have any questions regarding the rate forecasting completed?

Does the Council have any questions about a cost-of-service study?

Does the Council have any questions about the low income utility assistance program?

SUGGESTED NEXT STEPS

Next steps include bringing forward specific rate resolutions for Council approval along with an updated borrowing resolution for the Water Treatment Plant project.





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REFERENCES & ATTACHMENTS

Attachment #1: Water Rate Technical Memorandum

Attachment #2: Low Income Utility Assistance Memorandum

Attachment #3: 2016 Water Cost of Service Study

Attachment #4: Resolution 92-22



Technical Memorandum

To: Scott Fleury, Public Works Director

From: Catherine Hansford

Date: October 25, 2023

Subject: Water Rates Update

Purpose

The City of Ashland (City) charges water utility rates for provision of water services. In 2015, Hansford Economic Consulting LLC (HEC) completed a full cost-of-service study for the City and water rates were updated pursuant to that Study. Since then, the City has made some percentage increases in the rates to account for rising costs, and revision of some major capital improvement plans, most notably for the water treatment plant; however, water rates have not increased since July 1, 2019. HEC has updated the water rates projection per the City's current water fund financial needs, including its updated infrastructure costs and financing strategy to complete its new water treatment plant. This memorandum presents the analysis of current and future financial health of the water utility fund, including projection of water rates for revenue sufficiency for the next five years. New water rates need to be implemented in January 2024.

Support tables are included in **Attachment A**.

Major Findings

The financial analysis makes the following major findings:

1. The water utility fund is in a strong financial position, but to remain fiscally healthy, rates will need to continue to be increased due to major infrastructure costs, most notably the construction of the new water treatment plant, as well as typical annual inflationary pressures on operations costs. The analysis projects that six 10% increases will be needed, beginning January 2024, followed by five increases each July, beginning July 2024.
2. The water fund needs to maintain a high cash balance until the new water treatment plant project is completed. Actual costs may be greater than estimated, and the project may take longer to complete than anticipated. In addition, the City has several other high-cost capital projects taking place over the same timeframe that require reimbursement from other parties: (a) The Talent-Ashland-Phoenix Water System (TAP) partners and (b) an American Rescue Plan Act (ARPA) grant. Strong reserves are necessary for cash flow purposes when capital outlay is made on a reimbursement basis.

3. The City should conduct a cost-of-service study to ensure customer groups are paying for their share of water service costs, and to ensure a rate design that reflects customer use characteristics and administrative goals of the water fund. This memorandum presents the percentage increases of existing water rates as a full water rates study requires greater time and resources to complete.

Table 1 on the next page summarizes the projected water rates for the current and next two bienniums (six fiscal years). **Figure 1** shows the financial impact to a single-family home using 1,000 cubic feet of water in a month. Per Environmental Protection Agency and State of Oregon measurements of cost burden reasonableness (explained in this memorandum), monthly water bills will continue to be affordable in Ashland with these rate increases.

If the City's water rates had increased with the West Region Consumer Price Index between June 2019 and June 2023, the water bill for a household using 1,000 cubic feet would be \$73.89 starting July 1, 2023, as the cost of goods in the western US has increased 20% since 2019. The water rates for January 2024 (\$67.89) are lower than they would be by applying the 20% increase (\$73.89); this shows the City is spending prudently and managing its resources efficiently.

Figure 1
Single Family Home Bill for 1,000 cubic feet

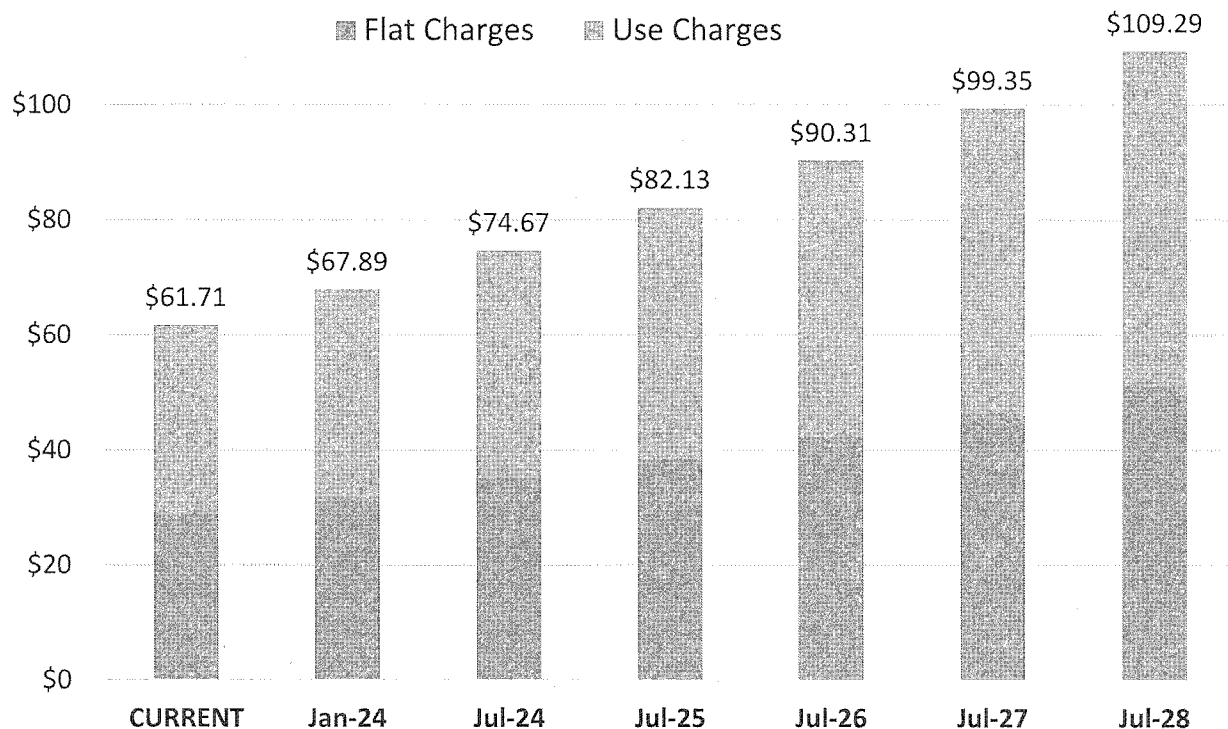


Table 1
Summary of Rate Increases for the next Six Years

Rate Component	Rates Implementation						
	Current	1/1/2024	7/1/2024	7/1/2025	7/1/2026	7/1/2027	7/1/2028
		10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Monthly Customer Charge per Bill	\$13.33	\$14.66	\$16.13	\$17.74	\$19.51	\$21.46	\$23.61
Monthly Service Charge per Meter [1]							
3/4" and Fire Guards	\$15.62	\$17.18	\$18.90	\$20.79	\$22.87	\$25.16	\$27.68
1"	\$16.29	\$17.92	\$19.71	\$21.68	\$23.85	\$26.24	\$28.86
1.5"	\$74.52	\$81.97	\$90.17	\$99.19	\$109.11	\$120.02	\$132.02
2"	\$118.41	\$130.25	\$143.28	\$157.61	\$173.37	\$190.71	\$209.78
3"	\$237.45	\$261.20	\$287.32	\$316.05	\$347.66	\$382.43	\$420.67
4"	\$376.59	\$414.25	\$455.68	\$501.25	\$551.38	\$606.52	\$667.17
6"	\$741.01	\$815.11	\$896.62	\$986.28	\$1,084.91	\$1,193.40	\$1,312.74
8"	\$1,174.75	\$1,292.23	\$1,421.45	\$1,563.60	\$1,719.96	\$1,891.96	\$2,081.16
USE CHARGES FOR POTABLE WATER							
Residential [2]							
		per month, per unit					
0 to 300 cf	\$0.0280	\$0.0308	\$0.0339	\$0.0373	\$0.0410	\$0.0451	\$0.0496
301 to 1,000 cf	\$0.0348	\$0.0383	\$0.0421	\$0.0463	\$0.0509	\$0.0560	\$0.0616
1001 to 2,500 cf	\$0.0472	\$0.0519	\$0.0571	\$0.0628	\$0.0691	\$0.0760	\$0.0836
> 2,500 cf (2,501 - 3,600 cf June to Sept)	\$0.0609	\$0.0670	\$0.0737	\$0.0811	\$0.0892	\$0.0981	\$0.1079
> 3,600 cf (June to Sept only)	\$0.0784	\$0.0862	\$0.0948	\$0.1043	\$0.1147	\$0.1262	\$0.1388
Commercial							
		per month, per meter					
0-50,000 cf	\$0.0348	\$0.0383	\$0.0421	\$0.0463	\$0.0509	\$0.0560	\$0.0616
> 50,000 cf	\$0.0472	\$0.0519	\$0.0571	\$0.0628	\$0.0691	\$0.0760	\$0.0836
Insitutional	\$0.0334	\$0.0367	\$0.0404	\$0.0444	\$0.0488	\$0.0537	\$0.0591
Commercial & Institutional Irrigation							
October - May	\$0.0376	\$0.0414	\$0.0455	\$0.0501	\$0.0551	\$0.0606	\$0.0667
June - September	\$0.0510	\$0.0561	\$0.0617	\$0.0679	\$0.0747	\$0.0822	\$0.0904
Bulk Water [3]	\$0.0384	\$0.0422	\$0.0464	\$0.0510	\$0.0561	\$0.0617	\$0.0679
Fire Protection Service [4]							
Meter Replacement Charge	\$1.34	\$1.47	\$1.62	\$1.78	\$1.96	\$2.16	\$2.38
Meter Charge	\$15.62	\$17.18	\$18.90	\$20.79	\$22.87	\$25.16	\$27.68
Service Charge, if applicable	\$13.33	\$14.66	\$16.13	\$17.74	\$19.51	\$21.46	\$23.61
Usage Charges	\$0.0384	\$0.0422	\$0.0464	\$0.0510	\$0.0561	\$0.0617	\$0.0679
TID Non-Potable Water							
		per irrigation season, per acre or portion of					
Unmetered Service	\$241.18	\$265.30	\$291.83	\$321.01	\$353.11	\$388.42	\$427.26
Metered Service:							
Service Charge		per meter as above					
Meter Replacement Fee [5]		per meter as above					
Water Consumption per c.f.	\$0.0025	\$0.0028	\$0.0031	\$0.0034	\$0.0037	\$0.0041	\$0.0045

Outside City Limits

All rates and charges for water service provided outside the city limits will be 1.5 times the inside city rates and charges.

Source: City of Ashland.

sum rates

[1] All customers charged the flat monthly fees every month regardless of whether water is taken.

[2] For residential customers with separate irrigation meters the metered irrigation water is added to the domestic water use.
Irrigation water is charged the 301 to 1,000 cf rates for use 0 to 1,000 cf.

[3] For temporary water provided through a bulk meter on a fire hydrant.

[4] This rate shall apply to all water taken through fire protection services or fire guards.

[5] Due once per year on first TID non-potable water bill.

Methodology

The water rate analysis presented in this memorandum is not a full cost of service study examining proportionate costs to different customer groups; rather, it projects financial needs over the current and next two bienniums, and how to fund those needs. Water rate revenues are projected under various assumptions including these:

- Water demand is projected to stay static over the next ten years. Although new water customers may hook into the water system during this period, other factors may cause water demand to remain at their current level, or even decrease. Factors that affect demand include, amongst other factors, the weather, water restrictions, and installation of more water efficient water appliances. **Table A-1** presents historical water production for the past eleven years. The table demonstrates the variability of water demand from year to year and it also shows that total water produced to satisfy demand decreased between 2013 and 2022. Water production has been greater in 2023, likely due to the ending of the most recent drought.
- Operating expenses, which account for annual costs to run the water system excluding any major capital repairs or new infrastructure installations, are projected through the six-year period based on historical annual increases in cost as well as City staff input on anticipated future cost increases in the current biennium. Historical water fund expenses from 2016 through 2022 are presented in **Table A-2**. On average, expenses increased 3.7% per year over the six-year period. The projection of revenue requirement is based on the historical changes of costs by cost category, and for the next two bienniums, ranges between 4.2% and 4.7% each year.
- Aside from water rate revenues, the water fund receives non-potable water revenues from customers using the Talent Irrigation Ditch (TID), and other miscellaneous income such as interest income and new service installation charges. These revenues are credited against the estimated annual costs to determine the revenue requirement (the amount of money that must be raised through water rates). System development charges, which are specifically collected to mitigate new development's impact on the water system, are not credited against revenues to be raised by rates. Revenues that are credited in the analysis are based on historical and budgeted numbers, as well as conservative estimates of future revenues. Historical revenues are presented in **Table A-3**. Total water sales have remained similar each year since 2019 due to the freezing of water rates.
- In addition to operating expenses, the water utility fund incurs costs for capital expenditures. Capital expenditures include costs to rehabilitate major infrastructure components, and/or install new or replacement facilities. **Table A-4** presents the City's Capital Improvements Plan (CIP) for water for current and next two bienniums. The City's estimated costs were increased for inflation annually over the next five years, apart from the water treatment plant estimated costs as the engineering estimates for that project already include inflation in the project cost estimates.

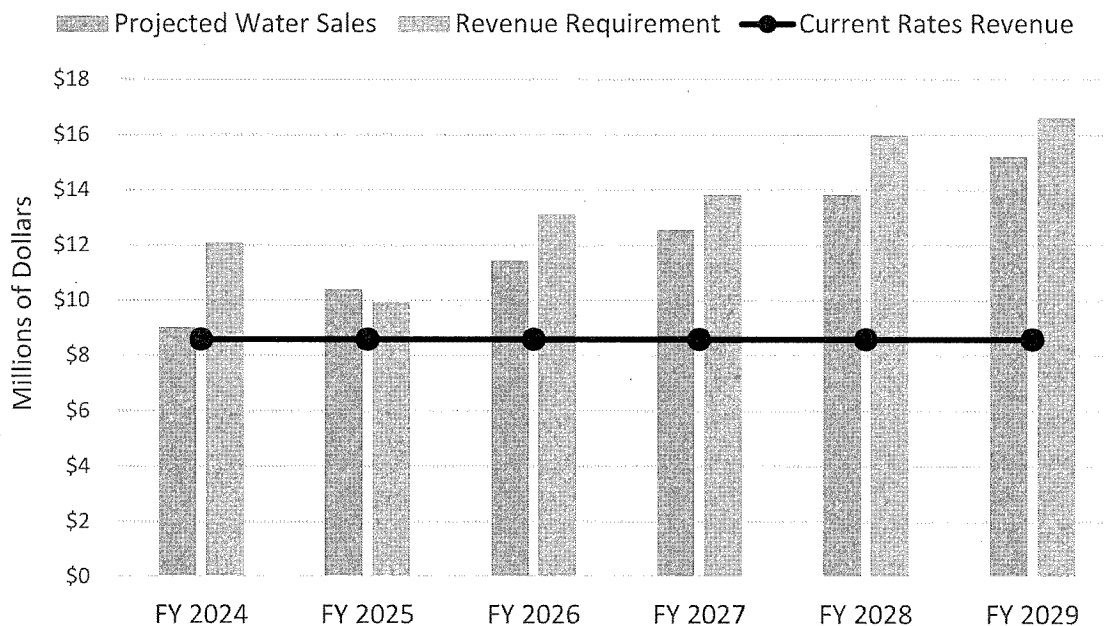
- The City's financial advisor has provided a funding strategy for the new water treatment plant total estimated cost of \$70 million. The City has secured a Water Infrastructure Finance and Innovation Act (WIFIA) loan for the full amount of \$70 million. The water fund's existing debt service and the estimated new water treatment plant debt service is shown in **Table A-5**.
- The water rate analysis assumes additional City debt funding to complete the CIP within the six-year period. **Table A-6** shows the financing costs and estimated annual debt service assumptions to raise bond proceeds of \$6.7 million to fund dam safety improvements.
- The projected revenue requirement for each year in the forecast is presented in **Table A-7**. The revenue requirement is estimated to increase from approximately \$12.0 million this fiscal year to \$16.5 million in five years. The revenue requirement may go up and down in the in-between years because of cash-funded capital improvement costs and debt service schedules.
- One of the revenue credits in the analysis is rate revenue from TID raw water customers. City rates charged to TID customers are assumed to increase at the same percentage increase as all other City water customer fees. A cost-of-service analysis may demonstrate the need for TID customer rates to increase at different rates; however, the same is assumed for the purposes of this analysis. TID revenue projections are provided in **Table A-8**.
- It is preferable to adopt a smooth rate schedule that does not increase and decrease each year to exactly account for the revenue requirement. Based on the assumption that water demand is static, as previously discussed, the water revenues are increased by 10% in January 2024, followed by five annual 10% increases beginning July 2024. **Table A-9** presents the estimated cash flow for the water fund through fiscal year ending 2029. The table demonstrates at least 115% debt service coverage is achieved and positive net revenue is generated after accounting for operating expenses and debt service. The ending cash balance each year is an estimate of available cash for restricted, committed and unassigned water service or project needs. Per terms of the WIFIA loan, the City could establish a Rate Stabilization Fund if it chooses to do so.

Excluded from the cash flow analysis are loan funds and bond proceeds received by the City, and project costs funded by those loans and bond proceeds. The analysis excludes these because of the unknown timing of the projects' expenditures and revenues. Debt service for these projects is included in the cash flow analysis. As a result, actual cash balances may be significantly greater or lesser from one year to the next than shown in the table.

Results

Revenue generated by water rates must be sufficient to cover all operating expenses each year and debt service coverage and raise sufficient revenue to fund capital projects that are not debt-financed or covered by existing reserves. **Figure 2** shows the current level of water sales revenues, projected revenue requirement, and projected water sales under the calculated percentage increases in water rates, beginning January 2024. The graph shows that a portion of the cash-funded capital improvement costs included in the revenue requirement will be paid for with water fund reserves that have been accumulated for this purpose.

Figure 2
Revenue Requirement and Projected Water Sales



Historical and projected annual ending cash balances are shown in **Figure 3**. The cash balance is projected to have peaked in fiscal year ending 2023 as reserves were being increased to fund upcoming known capital project costs. The City will use a combination of grants, loans, rates revenue and cash reserves to pay for capital improvement costs over the next six years.

Figure 4 shows the projected total cash balance of the water fund through fiscal year 2029, and the target minimum cash balance. The target minimum cash balance is equivalent to 20% of revenues plus one year of debt service (excluding City General Obligation bonds and the WIFIA loan, which are not secured by bond reserves). This amount enables the City to respond to emergency expenses, decreased revenues due to drought and fires if structures are destroyed, and to put aside one year of debt service, which is typically required to be held in a restricted account per the terms of the loan.

Figure 3
Historical and Projected Water Fund Cash Balance

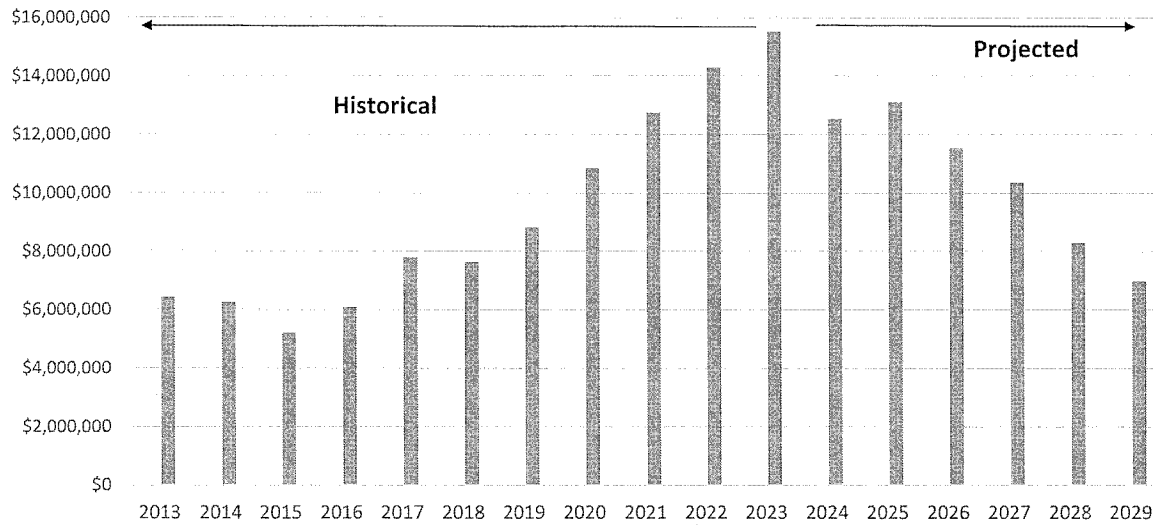
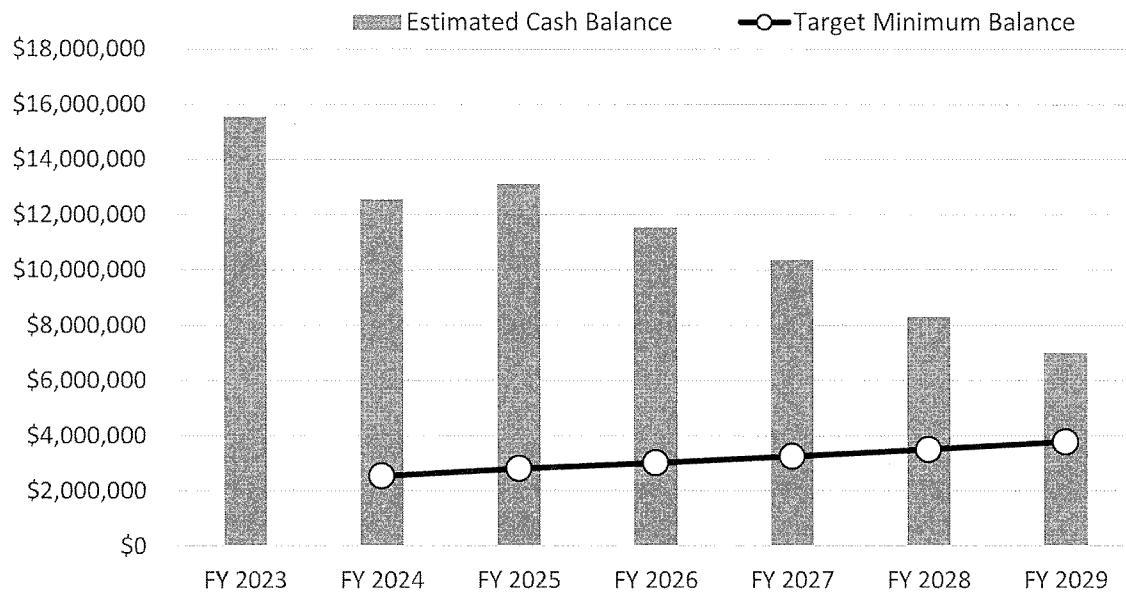


Figure 4
Projected Water Fund Cash Balance



Impact on Residential Customers

The EPA considers a water bill under 2.0% of median household income to be affordable. Currently, the water bill is \$61.71 (about 1.16% of area median household income). With the first rate increase of 10% in January 2024, the bill for 1,000 cubic feet of water would be \$67.89, or 1.28% of median household income, as shown in **Table 2** below, keeping the water bill within what is considered the threshold range of affordability in the industry.

Table 2
Impact of Rates on Household Affordability

Item	Annual	Monthly
Oregon Median Household Income (MHI) [1]	\$70,084	\$5,840
Ashland MHI [1]	\$63,641	\$5,303
CURRENT Water Bill 3/4" using 1,000 cu. ft.	\$741	\$61.71
Water Bill as % of Ashland MHI		1.16%
January 2024 Water Bill 3/4" using 1,000 cu. Ft.	\$815	\$67.89
Water Bill as % of Ashland MHI		1.28%
Water Rates @ 2.0% of MHI [2]	\$1,273	\$106.07

Source: US Census.

[1] 2021 5-year American Community Survey estimate.

[2] Per EPA guidelines a typical water bill greater than 2% is high and a typical water bill greater than 2.5% is burdensome.

To receive preferable financing terms and/or grant funding from the State of Oregon, the water bill needs to be at least \$66.29 when using 1,000 cubic feet of water in a month in Ashland (this is 1.25% of median household income). With the increase in rates, the City will qualify for preferential loan terms. The State uses the last decennial US Census data and adjusts each year to determine the current median household income. The estimate of median household income used in this analysis is the 2021 5-year ACS figure for Ashland. **Table 2** also shows that monthly water bills would need to be greater than \$106.07 per month for the EPA to consider the bill unaffordable.

Table 3 compares a typical water bill for a ¾" meter using 1,000 cubic feet to other cities and communities in Oregon. Ashland's water bill is at the higher end of the range, reflecting the large capital investments in the treatment plant that will ensure a sustainable and secure water supply into the future. In addition, the City is working with TAP partners to bolster its secondary source of water for emergencies and drought-year water supplies, and investing in infrastructure that will allow the sale of Ashland's water to TAP partners during the winter when Ashland has an excess of water supplies. These actions show forward planning at a time when many communities are not investing in their water infrastructure; in the long run the benefits of these actions will be reaped by ratepayers.

Table 3
Comparison Water Bills for a Typical Residence in Oregon

Water Purveyor	Base Charge as % of Bill	Base Charges	Use Charges	Monthly Bill
			<i>for 10 HCF</i>	<i>3/4" Meter</i>
Klamath Falls	13%	\$3.56	\$23.80	\$27.36
Central Point	57%	\$17.37	\$13.06	\$30.43
Medford	68%	\$21.92	\$10.21	\$32.13
Corvallis	41%	\$18.47	\$26.46	\$44.93
Phoenix	88%	\$40.61	\$5.36	\$45.97
Eagle Point	39%	\$18.11	\$28.00	\$46.11
Bend	55%	\$25.99	\$21.60	\$47.59
Talent	46%	\$22.11	\$25.75	\$47.86
Springfield	48%	\$23.10	\$25.26	\$48.36
Grants Pass	77%	\$37.62	\$11.25	\$48.87
Tualatin	22%	\$11.00	\$39.00	\$50.00
Roseburg	58%	\$30.31	\$21.60	\$51.91
Ashland (current)	47%	\$28.95	\$32.76	\$61.71
Albany	35%	\$23.01	\$43.10	\$66.11
Ashland (Jan. 2024)	47%	\$31.84	\$36.05	\$67.89
Tualatin Valley WD	14%	\$11.71	\$70.30	\$82.01

Source: Rate schedule for each water purveyor, July 2023.

compare

ATTACHMENT A

WATER UTILITY FUND 2023 FINANCIAL ANALYSIS SUPPORT TABLES

Table A-1

City of Ashland Water Rate Study
Historical Potable Water Production

DRAFT

Month Year	Calendar Year										Avg. Annual Water Delivery (MG)	Percent of Delivery by Month
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Figures in Millions of Gallons												
January	43.0	42.4	53.7	48.6	52.9	49.3	51.3	50.6	48.6	49.6	69.8	5%
February	37.0	37.4	48.1	45.2	45.5	45.2	44.3	46.7	43.7	45.7	62.6	5%
March	42.4	41.7	54.4	48.0	52.4	48.8	50.3	52.1	51.6	51.6	69.8	5%
April	54.8	56.4	64.2	64.2	51.7	59.5	56.1	75.0	82.0	55.5	72.6	6%
May	90.5	97.7	94.3	89.4	88.7	93.3	96.7	103.1	123.4	76.3	114.3	10%
June	117.3	119.3	126.5	123.2	121.5	118.5	131.2	106.0	137.1	110.9	127.8	12%
July	170.5	137.2	130.7	136.1	157.1	158.1	150.9	147.4	111.3	143.5	144.3	14%
August	155.3	131.4	125.3	151.5	161.9	157.8	145.9	160.5	97.0	99.1	138.6	14%
September	114.3	104.1	104.6	120.2	123.0	131.6	98.0	136.1	68.3	101.5	110.2	11%
October	99.2	83.6	90.9	70.8	94.9	85.8	71.8	48.6	55.5	77.6	77.9	8%
November	81.6	55.4	46.9	53.5	55.6	60.8	59.3	46.6	50.0	71.2	58.1	6%
December	53.0	51.0	49.3	49.4	49.6	49.2	51.3	50.6	49.9	69.9	52.3	5%
Total	1,058.8	957.5	988.9	1,000.0	1,054.9	1,057.8	1,007.1	1,023.3	918.4	952.3	A 1,010.7	100%
Base Monthly Flow (Dec - Mar)												
Average Annual Base Flow											B 50.0	59%
Average Annual Additional Flow											C = B*12 410.7	41%
Source: City of Ashland												
prodn												

Source: City of Ashland.

prodn

Table A-2

City of Ashland Water Rate Study
Historical Water Fund Operation Expenditures (excludes SDC funds)

DRAFT

Expenses	Fiscal Year Ending					6-Year Change	Avg. Annual % Change
	2016	2017	2018	2019	2020	2021	2022
Water Fund Operating Expenses							
Personnel	\$1,704,110	\$1,712,355	\$1,815,873	\$1,863,488	\$1,883,177	\$1,737,258	\$1,970,368
Supplies	\$206,742	\$202,999	\$194,574	\$214,583	\$184,685	\$269,174	\$227,349
Rental, Repair, Maintenance	\$221,868	\$312,859	\$282,656	\$336,585	\$254,069	\$376,643	\$344,521
Communications	\$14,985	\$14,413	\$27,359	\$16,691	\$14,947	\$15,104	\$19,421
Contractual Services	\$340,374	\$214,959	\$183,657	\$197,351	\$193,747	\$303,948	\$194,171
Internal Charges & Fees	\$1,520,175	\$1,554,723	\$1,596,181	\$1,776,378	\$2,144,666	\$2,152,004	\$1,984,837
Other Purchased Services	\$169,127	\$178,117	\$171,131	\$189,537	\$173,075	\$157,538	\$306,303
Franchise Tax	\$418,922	\$446,737	\$639,429	\$675,602	\$689,205	\$721,304	\$682,933
Conservation Programs	\$47,727	\$69,177	\$40,558	\$35,044	\$27,658	\$35,007	\$38,810
Subtotal Operating Expenses	\$4,644,030	\$4,706,339	\$4,951,418	\$5,305,259	\$5,565,229	\$5,767,980	\$5,768,712
						\$1,124,682	

Source: City of Ashland.

op exp

Table A-3

City of Ashland Water Rate Study
Historical and Budgeted Water Fund Revenues

DRAFT

REVENUES	Fiscal Year Ending								
	2016	2017	2018	2019	2020	2021	2022	2023	2024
	actual	actual	actual	actual	actual	actual	actual	preliminary	budget
Charges for Service									
Water Sales									
Commercial	\$980,376	\$933,234	\$986,155	\$1,004,092	\$975,456	\$966,838	\$987,976	\$1,030,431	\$1,080,000
Fire Guard	\$35,322	\$23,350	\$24,363	\$26,222	\$27,428	\$27,794	\$30,610	\$29,864	\$27,000
Government & Municipal	\$314,223	\$242,263	\$262,089	\$293,630	\$275,260	\$291,775	\$318,970	\$268,181	\$306,700
Multi-Family Residential	\$786,549	\$748,064	\$797,892	\$610,755	\$602,103	\$683,481	\$661,172	\$646,221	\$779,700
Single Family Residential	\$3,968,571	\$4,373,406	\$4,759,645	\$5,190,266	\$5,365,728	\$5,709,393	\$5,417,680	\$5,472,587	\$5,400,000
Irrigation (incl. TID customers)	\$740,136	\$910,045	\$888,155	\$1,010,849	\$1,010,858	\$1,164,905	\$983,244	\$1,137,898	\$1,000,000
Subtotal Water Sales	\$6,825,178	\$7,230,361	\$7,718,298	\$8,135,814	\$8,256,833	\$8,844,186	\$8,399,652	\$8,585,182	\$8,593,400
Reimbursement SDC	\$277,247	\$310,390	\$294,968	\$346,254	\$226,981	\$354,943	\$204,411	\$152,778	\$0
Improvement SDC	\$0	\$0	\$0	\$0	\$0	\$85,885	\$0	\$0	\$100,000
New Service Installation	\$73,122	\$61,724	\$53,673	\$23,395	\$59,620	\$69,886	\$64,673	\$41,307	\$40,000
Miscellaneous	\$27,287	\$37,150	\$42,922	\$30,690	\$38,961	\$7,430	\$2,900	\$4,370	\$0
Subtotal Charges for Service	\$377,656	\$409,263	\$391,562	\$400,339	\$325,562	\$518,144	\$271,984	\$198,455	\$140,000
Other Revenues									
Interest on Pooled Investments	\$32,632	\$69,182	\$139,859	\$228,124	\$216,316	\$80,500	\$65,754	\$304,255	\$146,450
Miscellaneous Income	\$39,351	\$47,197	\$40,443	\$26,996	\$41,749	\$14,294	\$4,104	\$1,289	\$25,000
Grants	\$14,897	\$0	\$0	\$0	\$6,331	\$16,766	\$0	\$26,250	\$0
Bond Proceeds	\$542,457	\$347,625	\$732,215	\$2,795,804	\$1,103,851	\$0	\$0	\$1,366,794	\$14,252,562
Subtotal Other Revenues	\$629,337	\$464,003	\$912,517	\$3,050,924	\$1,368,247	\$111,560	\$69,858	\$1,698,588	\$14,424,012
Total Revenues	\$7,832,171	\$8,103,628	\$9,022,377	\$11,587,077	\$9,950,642	\$9,473,890	\$8,741,494	\$10,482,225	\$23,157,412
Total Revenues w/o Bond Proceeds & Grants	\$7,274,818	\$7,756,003	\$8,290,162	\$8,791,273	\$8,840,460	\$9,457,124	\$8,741,494	\$9,089,181	\$8,904,850
Source: City of Ashland									
revs									

Source: City of Ashland.

revs

Table A-4
City of Ashland Water Rate Study
Water Capital Improvement Plan - Inflated Dollars

DRAFT

All estimates inflated with the exception of the treatment plant costs (inflation already built in)

Water Improvements	Funding Source	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
		BN 23-25		BN 25-27		BN 27-29	
Water Supply	<i>inflation assumption--></i>		3.5%	3.5%	3.5%	3.5%	3.5%
Dam Safety Improvements	New Bonds	\$3,313,000	\$3,429,000	\$0	\$0	\$0	\$0
East & West Fork Transmission Line Rehabilitation	Cash	\$2,300,000	\$0	\$0	\$0	\$0	\$0
7.0 MGD Water Treatment Plant	Debt Package	\$4,000,000	\$40,000,000	\$26,424,000	\$0	\$0	\$0
Reeder Reservoir Sediment Removal	Cash	\$0	\$0	\$172,000	\$0	\$0	\$191,000
Subtotal Water Supply		\$9,613,000	\$43,429,000	\$26,596,000	\$0	\$0	\$191,000
Pump Stations							
TAP BPS Backup Power	ARPA Grant	\$417,000	\$0	\$0	\$0	\$0	\$0
Hillview BPS Replacement	Cash	\$0	\$0	\$402,000	\$1,248,000	\$0	\$0
Subtotal Pump Stations		\$417,000	\$0	\$402,000	\$1,248,000	\$0	\$0
Water Distribution							
Annual Pipe Replacement	Cash	\$300,000	\$311,000	\$322,000	\$333,000	\$345,000	\$357,000
Distribution Pipe Projects	Cash	\$660,000	\$603,000	\$1,519,000	\$345,000	\$1,591,000	\$666,000
Subtotal Water Distribution		\$960,000	\$914,000	\$1,841,000	\$678,000	\$1,936,000	\$1,023,000
Operations and Maintenance							
Telemetry Upgrades	Cash	\$80,000	\$0	\$0	\$0	\$0	\$0
Tolman Creek Road PRV Station	Cash	\$0	\$0	\$0	\$84,000	\$0	\$0
FERC Part 12 Inspection	Cash	\$600,000	\$0	\$0	\$0	\$0	\$0
Subtotal Operations and Maintenance		\$680,000	\$0	\$0	\$84,000	\$0	\$0
Water System Studies							
Rezoning Study	Cash	\$0	\$0	\$0	\$0	\$0	\$60,000
Water Conservation and Management Plan Update	Cash	\$75,000	\$0	\$0	\$0	\$0	\$0
Water Master Plan Updates	Cash	\$0	\$0	\$108,000	\$0	\$0	\$0
Subtotal Water System Studies		\$75,000	\$0	\$108,000	\$0	\$0	\$60,000
TAP Improvements and Studies							
Non-Peak/Emergency Supply Connection to Talent	ARPA Grant	\$236,000	\$0	\$0	\$0	\$0	\$0
N. Phoenix Road Pipe Improvements	Cash [1]	\$0	\$0	\$0	\$0	\$1,063,000	\$1,100,000
N Phoenix Road Master Meter Connection	Cash [1]	\$0	\$0	\$0	\$0	\$129,000	\$0
Regional BPS Short-Term Expansion	TAP	\$211,000	\$0	\$0	\$0	\$0	\$0
Regional BPS Programming Updates	ARPA Grant	\$0	\$105,000	\$0	\$0	\$0	\$0
Talent BPS Generator Upgrade (Option 1)	ARPA Grant	\$0	\$461,000	\$0	\$0	\$0	\$0
Talent BPS Expansion for Talent & Ashland (Option 1)	TAP	\$0	\$143,000	\$0	\$0	\$0	\$0
Talent BPS Seismic upgrades	ARPA Grant	\$0	\$104,000	\$0	\$0	\$0	\$0
24-inch Pipe Seismic upgrades (Hwy 99 Phoenix)	ARPA Grant	\$0	\$1,680,000	\$0	\$0	\$0	\$0
Talent to Ashland Pipe Improvements (Option 1)	Cash [1]	\$0	\$0	\$0	\$0	\$0	\$799,000
Talent BPS Additional Hydraulic Analysis	Cash [1]	\$0	\$0	\$7,000	\$0	\$0	\$0
Subtotal TAP Improvements and Studies		\$447,000	\$2,493,000	\$7,000	\$0	\$1,192,000	\$1,899,000
TOTAL WATER CAPITAL PROJECTS		\$96,293,000	\$12,192,000	\$46,836,000	\$28,954,000	\$2,010,000	\$3,173,000
<i>Treatment Plant Debt Package</i>		<i>\$70,424,000</i>	<i>\$4,000,000</i>	<i>\$40,000,000</i>	<i>\$26,424,000</i>	<i>\$0</i>	<i>\$0</i>
<i>City GO Bonds</i>		<i>\$6,742,000</i>	<i>\$3,313,000</i>	<i>\$3,429,000</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>
<i>ARPA Grant</i>		<i>\$3,003,000</i>	<i>\$653,000</i>	<i>\$2,350,000</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>
<i>TAP Partner Reimbursements [2]</i>		<i>\$207,550</i>	<i>\$123,709</i>	<i>\$83,841</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>
<i>Reserves / Cash</i>		<i>\$15,916,450</i>	<i>\$4,102,291</i>	<i>\$973,159</i>	<i>\$2,530,000</i>	<i>\$2,010,000</i>	<i>\$3,173,000</i>

Source: City of Ashland May 2023.

clp infl

[1] Potential cost-share with TAP Partners, unknown at this time.

[2] Ashland is responsible for 41.37% of the total cost; as the project lead, Ashland will pay the contractors to complete the work with reimbursement from Talent and Phoenix.

Table A-5
City of Ashland Water Rate Study
Existing and Projected Debt

DRAFT

Existing Debt	FY 2024 Budgeted	FY 2025 2	FY 2026 3	FY 2027 4	FY 2028 5	FY 2029 6
City GO Bonds (FF&C)	\$194,125	\$195,463	\$196,469	\$197,131	\$197,438	\$0
MWC Debt for SDC Purchase	\$163,756	\$163,756	\$163,756	\$163,756	\$163,756	\$163,756
IFA DEQ Loan S14005	\$136,207	\$136,207	\$136,207	\$136,207	\$136,207	\$136,207
IFA DEQ Loan S16021	\$394,098	\$394,098	\$394,098	\$394,098	\$394,098	\$394,098
WIFIA Treatment Plant Debt [1]	\$0	\$702,000	\$1,638,000	\$2,574,000	\$3,276,000	\$3,705,287
Total Existing Debt Service	\$888,186	\$1,591,524	\$2,528,530	\$3,465,192	\$4,167,499	\$4,399,348

Source: City of Ashland May 2023, and HEC.

debt

[1] WIFIA \$70 million loan.

Table A-6
City of Ashland Water Rate Study
Estimated New Debt for Other CIP Improvements

DRAFT

Item	Assumptions	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Dam Safety Improvements		\$3,313,000	\$3,429,000	\$0	\$0	\$0	\$0
Total Debt Funded Improvements		\$3,313,000	\$3,429,000	\$0	\$0	\$0	\$0
Bond Sizing							
Capitalized Interest	12 months	\$182,220	\$188,600	\$0	\$0	\$0	\$0
Issuance Costs	3%	\$99,390	\$102,870	\$0	\$0	\$0	\$0
Underwriter's Discount	1%	\$33,130	\$34,290	\$0	\$0	\$0	\$0
Bond Reserve Fund	1 year debt service	\$332,800	\$344,400	\$0	\$0	\$0	\$0
Estimated Bond Size		\$3,960,540	\$4,099,160	\$0	\$0	\$0	\$0
Bond Size Adjusted for Rounding	1.20 bond load	\$3,976,000	\$4,115,000	\$0	\$0	\$0	\$0
Estimated Annual Debt Service [1]		\$332,800	\$344,400	\$0	\$0	\$0	\$0
Estimated Debt Service Payment			\$332,800	\$677,200	\$677,200	\$677,200	\$677,200

Source: HEC estimates based on planned CIP.

new debt

[1] Debt service estimate based on sale of revenue bonds with the following terms:

Interest rate: 5.5%

years: 20

Table A-7
City of Ashland Water Rate Study
Projected Water Fund Revenue Requirement

DRAFT

Revenues and Expenses		FY 2024 Current (1)	FY 2025 2	FY 2026 3	FY 2027 4	FY 2028 5	FY 2029 6
Operating Expenses		Budgeted [1]		Projected			
Personnel	3.5%	\$2,709,283	\$2,767,361	\$2,864,219	\$2,964,467	\$3,068,223	\$3,175,611
Supplies	2.0%	\$360,525	\$358,900	\$366,078	\$373,400	\$380,868	\$388,485
Repair & Maintenance	8.0%	\$579,500	\$564,330	\$609,476	\$658,235	\$710,893	\$767,765
Communications	2.0%	\$22,200	\$21,650	\$22,083	\$22,525	\$22,975	\$23,435
Contractual Services	3.0%	\$419,500	\$418,000	\$430,540	\$443,456	\$456,760	\$470,463
Internal Charges & Fees	5.0%	\$2,101,797	\$2,069,072	\$2,172,526	\$2,281,152	\$2,395,210	\$2,514,970
Other Purchased Services	4.0%	\$78,750	\$60,300	\$62,712	\$65,220	\$67,829	\$70,542
Franchise Tax	4.0%	\$705,000	\$720,000	\$748,800	\$778,752	\$809,902	\$842,298
Conservation Programs	2.0%	\$94,950	\$0	\$35,000	\$35,700	\$36,414	\$37,142
TAP Water [2]	3.5%	\$250,000	\$258,750	\$267,806	\$277,179	\$286,881	\$296,922
Subtotal Operating Expenses		\$7,321,506	\$7,238,364	\$7,579,240	\$7,900,086	\$8,235,955	\$8,587,633
Debt Service & Loan Repayments							
City GO Bonds (FF&C)	Table A-5	\$194,125	\$195,463	\$196,469	\$197,131	\$197,438	\$0
MWC Debt for SDC Purchase	Table A-5	\$163,756	\$163,756	\$163,756	\$163,756	\$163,756	\$163,756
IFA DEQ Loan S14005	Table A-5	\$136,207	\$136,207	\$136,207	\$136,207	\$136,207	\$136,207
IFA DEQ Loan S16021	Table A-5	\$394,098	\$394,098	\$394,098	\$394,098	\$394,098	\$394,098
WIFIA Treatment Plant Debt	Table A-5	\$0	\$702,000	\$1,638,000	\$2,574,000	\$3,276,000	\$3,705,287
New City Debt	Table A-6	\$0	\$332,800	\$677,200	\$677,200	\$677,200	\$677,200
Subtotal Debt Service & Loan Repayments		\$888,186	\$1,924,324	\$3,205,730	\$4,142,392	\$4,844,699	\$5,076,548
Capital Improvements Cash Funded	Table A-4	\$4,102,291	\$973,159	\$2,530,000	\$2,010,000	\$3,128,000	\$3,173,000
Subtotal Annual Cost		\$12,311,982	\$10,135,847	\$13,314,970	\$14,052,478	\$16,208,654	\$16,837,180
Credits							
New Service Installation	2.0%	\$40,000	\$40,800	\$41,616	\$42,448	\$43,297	\$44,163
Interest on Investments	constant	\$146,450	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000
Miscellaneous	2.0%	\$25,000	\$25,500	\$26,010	\$26,530	\$27,061	\$27,602
Non-Potable Water (TID) Charges	Table A-8	\$79,669	\$92,185	\$101,322	\$111,129	\$122,485	\$134,652
Subtotal Credits		\$291,119	\$298,485	\$308,948	\$320,107	\$332,843	\$346,417
REVENUE REQUIREMENT		\$12,020,863	\$9,837,362	\$13,006,023	\$13,732,370	\$15,875,810	\$16,490,763
Current Water Sales (excludes TID)		\$8,513,731	\$8,513,731	\$8,513,731	\$8,513,731	\$8,513,731	\$8,513,731

Source: HEC.

rev req

[1] Budgeted operating expenses and debt service. New City debt service is not budgeted in 2023-25 biennium budget.

[2] Accounted for in the 2024 budget under Water Supply - Other Purchased Services. Separated here for MWC rate increases.
MWC rate increases are planned at 3.5% per year.

Table A-8
City of Ashland Water Rate Study
Projection of TID Non-Potable Water Revenue Offset

DRAFT

Costs	Assumption	FY 2024 Budgeted [1]	FY 2025 2	FY 2026 3	FY 2027 4	FY 2028 5	FY 2029 6
TID Annual Cost Paid by Metered Customers							
Base Meter Charge [1]							
SOU (6" meter)	\$8,892	\$9,781	\$10,759	\$11,835	\$13,019	\$14,321	\$15,753
Lithia Park (4" meter)	\$4,519	\$4,971	\$5,468	\$6,015	\$6,617	\$7,278	\$8,006
Metered Water Use [2]							
SOU (6" meter)	\$17,754	\$19,885	\$22,015	\$24,146	\$26,276	\$29,117	\$31,958
Lithia Park (4" meter)	\$2,551	\$2,857	\$3,164	\$3,470	\$3,776	\$4,184	\$4,592
Total SOU	\$26,646	\$29,666	\$32,775	\$35,981	\$39,295	\$43,438	\$47,710
Total Lithia Park (City)	\$7,070	\$7,828	\$8,632	\$9,485	\$10,392	\$11,462	\$12,598
Total TID Metered Customers	\$33,717	\$37,494	\$41,406	\$45,466	\$49,688	\$54,900	\$60,309
All Other TID Users Costs							
Annual Flat Fees [3]	\$41,965	\$46,162	\$50,778	\$55,856	\$61,441	\$67,585	\$74,343
Total TID Unmetered Customers	\$41,965	\$46,162	\$50,778	\$55,856	\$61,441	\$67,585	\$74,343
Total Estimated TID Customer Payments							
Meter Fees	\$13,411	\$14,752	\$16,228	\$17,850	\$19,635	\$21,599	\$23,759
Use Fees	\$62,271	\$68,904	\$75,957	\$83,471	\$91,493	\$100,886	\$110,893
Total Fees	\$75,682	\$83,657	\$92,185	\$101,322	\$111,129	\$122,485	\$134,652
Source: City of Ashland and HEC.							
[1] Customer charges and meter replacement fees for one 6" meter (SOU) and one 4" meter (Lithia Park).							
[2] [3] Calculated Rate per Metered Connecti							
Calculated Rate per Acre	\$241.18	\$265.30	\$291.83	\$321.01	\$353.11	\$388.42	\$427.26

tid offset

Table A-9

City of Ashland Water Rate Study
Projected Water Fund Cashflow

DRAFT

Revenues and Expenses	FY 2024 Budgeted [1]	Fiscal Year Ending					FY 2029
		FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	
		2	3	4	5	6	
	<i>Rates Increase</i>	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Revenue							
Municipal Water Sales	\$8,939,417	\$10,301,614	\$11,331,776	\$12,464,953	\$13,711,448	\$15,082,593	
TID Water Sales	\$79,669	\$92,185	\$101,322	\$111,129	\$122,485	\$134,652	
Other Revenue Sources	\$211,450	\$206,300	\$207,626	\$208,979	\$210,358	\$211,765	
Total Revenue [2]	\$9,230,537	\$10,600,099	\$11,640,723	\$12,785,060	\$14,044,292	\$15,429,010	
Operating Expenses	\$7,321,506	\$7,238,364	\$7,579,240	\$7,900,086	\$8,235,955	\$8,587,633	
Net Revenue before Debt Service	\$1,909,031	\$3,361,735	\$4,061,483	\$4,884,975	\$5,808,337	\$6,841,378	
Debt Service	\$888,186	\$1,924,324	\$3,205,730	\$4,142,392	\$4,844,699	\$5,076,548	
<i>Debt Service Coverage [3]</i>	2.15	1.75	1.27	1.18	1.20	1.35	
Net Revenue	\$1,020,845	\$1,437,411	\$855,753	\$742,583	\$963,638	\$1,764,830	
Beginning Balance	\$15,533,793	\$12,552,347	\$13,116,600	\$11,542,352	\$10,374,935	\$8,310,573	
Net Revenue (Deficit)	\$1,020,845	\$1,437,411	\$855,753	\$742,583	\$963,638	\$1,764,830	
Cash-Funded Capital Improvements	(\$4,102,291)	(\$973,159)	(\$2,530,000)	(\$2,010,000)	(\$3,128,000)	(\$3,173,000)	
Bond/Loan Proceeds		<i>Excludes Bond/Loan Proceeds & Projects Funded with Proceeds [4]</i>					
Add SDC Revenue	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	
Ending Balance [5]	\$12,552,347	\$13,116,600	\$11,542,352	\$10,374,935	\$8,310,573	\$7,002,403	
Target Minimum Balance [6]	\$2,540,168	\$2,814,081	\$3,022,206	\$3,251,073	\$3,502,919	\$3,779,863	

Source: City of Ashland and HEC.

flow

[1] Increase in rates for FY 2024 is for 6 months (Jan-Jun). [2] Excludes system development charges and LID assessments.

[3] Minimum 1.15 "coverage revenues" required for the WIFIA loan. [4] Timing of receipt of loan/debt proceeds is unknown.

[5] The City may establish a Rate Stabilization Fund into which cash greater than all lawful expenses have been paid, and the City has achieved at least the minimum cash balance for the Water Fund.

[6] The target balance is 20% of revenues plus one year debt service (excluding City GO debt and the WIFIA loan, which are not secured by bond reserves).

Technical Memorandum

DRAFT

To: Scott Fleury, Public Works Director

From: Catherine Hansford

Date: January 16, 2023

Subject: Senior and Senior Disabled Low Income Utilities Bill Assistance Program

Purpose

The City of Ashland (City) currently has utility bill relief programs for low-income households. Two programs have been set up under the authority of Resolution 92-22. The programs have morphed over time, with Ashland Administrative Policy providing greater detail about the Low-Income Energy Assistance Program; however, the water and wastewater utility discounts have not been reviewed since 1992. Brief descriptions of the two programs are provided here:

- **The Low-Income Energy Assistance Program.** This program applies to the electric portion of the City's utility bill. Under this program, a household with income at or below 65% of the State Median Income (SMI) can receive a credit of 50% for low-income senior and low-income disabled persons for up to six months during the winter months, and to all other low-income households for up to three months. Households can receive a \$300 maximum credit applied to the electric portion of the utility bill each year they apply. This program is administered under City Administrative Policy 2017.08.01.
- **The Senior and Disabled Year-Round Discount Program.** This program currently applies to all public works (water, wastewater, transportation and storm drain) utility fees and electric; however, as originally written in Resolution 92-22, the discount was intended to only be applied to water, sewer, and electric. Under this program, a household can receive a 20% or 30% discount indefinitely; note however, that if the qualifying person moves out of the residence, the discount is removed. Proof of eligibility is required by the City, but in practicality the City lacks human resources to verify eligibility of every account every year. One-time emergency assistance of up to \$100 in a calendar year may also be granted to a utility customer.

This memorandum reviews low-income utility bill assistance programs at other Oregon cities to recommend potential modifications to the City's current Senior and Senior Disabled Low Income Year-Round Discount Program, specifically for the water and wastewater utilities.

Potential modifications to Resolution 92-22 are provided. The potential modifications would eliminate the discount currently being provided to the same customers' storm drain and transportation utility fees.

Review of Comparison City Programs

HEC conducted a survey of comparison low-income household utilities bill assistance programs. **Exhibit A** summarizes the programs of surveyed cities. Some cities only apply the discount to water or sewer or both water and sewer, some also provide the discount to stormwater, garbage, and other City services. Of the 18 cities included in the survey, only Ashland and Klamath Falls limit low-income assistance programs to seniors. Four of the cities only provide limited relief (once or twice per year), rather than continual monthly bill discounts.

Senior Discounts. Ashland only provides bill assistance to Seniors who are low-income and age 65+ years. Klamath Falls also requires the low-income household to have a qualifying senior for a discount which is given as a once-per-year rebate, but most of the cities of similar size to Ashland (population between 15,000 and 40,000) that have low-income assistance programs for water and wastewater utilities do not restrict their program to Seniors. Of the 9 comparably-sized cities, 7 do not have an age or other qualifying condition (Hermiston, Sherwood, Milwaukie, Newberg, West Linn, and Redmond). Troutdale requires the low-income household to have a Senior or a Disabled person living in the household (the Disabled person in the household does not have to be a Senior). Troutdale's two qualifying discounts are only applicable to the sewer bill (Troutdale does also provide water and stormwater services).

Of the larger sized cities, Albany; which has a population of about 57,000 people, provides a low-income senior discount. Albany defines a senior citizen as age 60+, rather than 65+. Bend and Salem also provide low-income senior discounts. Elderly persons in Salem must be aged at least 60 years to qualify for discounts to their water, sewer, and garbage bills. Elderly persons in Bend must be at least 62 years old, and the bill assistance program is only for sewer and storm drain services (Bend does also provide water service).

Disabled Person Discounts. Ashland only provides a disabled person discount if the disabled person is at least 60 and qualifies as low income. As already mentioned, Troutdale provides a discount for disabled persons regardless of age, provided they qualify as low income. Salem and Bend, larger sized cities, have disabled persons programs that provide the same discount as their elderly citizens programs do, but the disabled person need not be a senior (they must qualify as low income). Portland's program applies to water, sewer, and storm drain. Salem's program applies to water, sewer, and garbage services. The City of Albany also provides discounted bills to disabled persons provided they qualify as low income, also independent of their age, on their water bills and City services fees (but not their sewer and stormwater fees).

Other Discounts. Newberg offers an active military and veteran discount in addition to a low-income discount (they are mutually exclusive).

Amount of Assistance Offered. The amount of financial assistance offered varies from city to city. Most of the surveyed cities provide their assistance as a percentage discount off the total bill as Ashland does; however, some restrict the percentage discount to the base charges only or waive the base charge and a percentage of the use charge.

Emergency Bill Assistance. Ashland offers a one-time \$100 credit per year per account, subject to funds availability. Similar to Ashland's Emergency Credit program, Milwaukie also provides temporary assistance with limited funds, but no other city of similar size provides emergency water and wastewater utility bill assistance. Milwaukie offers a maximum of \$400 every 12 months. Of the 7 larger sized cities (population greater than 40,000), Bend, Salem, and Portland also offer some form of temporary assistance. Bend offers a one-time credit up to \$150 for households not already eligible for other discounts on their utilities bill. Portland and Salem both provide \$500 one-time discounts each year for households with a demonstrated need.

Options to Modify the Current Program

Based on the survey of low-income assistance programs run by other Oregon cities, Ashland should consider the following, not listed in any particular order, and not exclusively of each other:

- Removing the restriction of the program to Seniors only and expanding the program to all low-income households with percentage of assistance provided on a sliding scale with household income levels. If changed in this way, the need to prove being elderly or disabled is removed.
- Allowing low-income disabled persons to receive the same assistance as a low-income Senior Citizen (removing the 60 years old age restriction currently in place for disabled persons).
- Reducing the Seniors eligibility criteria from 65 to 60 or 62.
- Keeping the one-time Emergency Assistance program as it is.

Recommended Modifications to Resolution 92-2 and Ashland Municipal Code

It is recommended that the City repeal Resolution 92-2 and adopt two separate resolutions for utility bill assistance programs for 1) electric, and 2) water and sewer. If the City wanted to continue providing discounts for storm drain and transportation utility fees, which are currently provided but not authorized by resolution 92-2, then an additional new resolution would be necessary for those utility fee discounts. City Municipal Code will also need to be amended to reflect City Council decisions on utility bill assistance programs.

Municipal Code

It is recommended that, at a minimum, the following changes be made to the Municipal Code (deletions shown in ~~strikeout~~ and additions shown in red) to reflect the current low-income assistance program. While no changes are recommended to the Municipal Code for special hardship cases (14.02.015.D), staff has noted that the City does not have documentation of any applications for special hardship consideration in the past 12 years.

14.02.015 Senior Citizen Discount

- A. To qualify for a 30% senior citizen discount under the utilities bill assistance program, a person must be 65 years of age or disabled and 60 years of age and the total household income shall not exceed the Federal Community Services Administration poverty guidelines.
- B. To qualify for a 20% senior citizen discount under the utilities bill assistance program, a person must be 65 years of age or disabled and 60 years of age and the total household income shall be between 100% and 125% of the Federal Community Services Administration poverty guidelines.
- B. C. The senior citizen discount shall only apply to the applicant's residence.
- C. D. A senior citizen desiring to receive a utilities bill discount must submit an initial application to the City on forms provided by the City. In order to maintain continuous qualification for such discount, the senior citizen shall, not later than June 30 of each ensuing year, file an annual application for renewal on forms provided by the City. The City Manager or the City Manager's designee shall determine whether the applicant meets the qualifications and requirements of the City.
- D. E. In special hardship cases, a committee of two (2) City Council members and the Senior Program Director may recommend that the City Manager grant exemptions to the foregoing income limitations where the circumstances justify such exemptions. (Ord. 3192 § 107, amended, 11/17/2020; Ord. 2673, amended, 1992).

14.04.030 Water rate schedules

The water rate schedules and ~~senior discount rate~~ utilities bill assistance discounts shall be established by Resolution of the City Council.....

14.08.035 Sewer User Charges

The sewer Rate Schedules and ~~senior discount rate~~ utilities bill assistance discounts shall be established by Resolution of the City Council.....

14.16.030 Electric Rate Schedules

The electric rate schedules and utilities bill assistance discounts shall be established by Resolution of the City Council.....

EXHIBIT A

COMPARISON OREGON CITIES UTILITIES BILL ASSISTANCE PROGRAMS

City Name and Population	City or Agency Handling the Program	Utilities Included	Eligibility and Program Type (Low Income, Senior, Disabled, Other)	Program Description
Troutdale (16,819)	City	Sewer only (City provides water, sewer, storm drain services)	Low Income - <u>Senior Citizen</u> 65+, must be <50% of Multnomah County MFI limits by HH size, must not be in arrears with utility bill, service must be in the name of the applicant and applicant must be resident, must apply every year. <u>Disabled</u> - applicant must receive Social Security Disability, HH income must not exceed 80% of the MFI, same eligibility requirements as for senior citizens.	50% of monthly sewer charge.
Hermiston (19,749)	City	Water, Sewer	Low Income - based on Fed. Poverty guidelines by HH size, must be verified annually using Federal income tax statement.	50% of water and sewer base charges.
Sherwood (20,222)	City	Water, Sewer, Streets, Surface Water Mgm't	Low Income - must have been a customer for 4+ months, must be at 60% of SMI by HH size.	Once per year assistance for 2 months of base charges on all services and an additional month base charge for water.
Milwaukie (21,305)	<u>Low Income Assistance</u> - City; <u>Temporary Assistance</u> - St Vincent DePaul Society	Water, Sewer, Stormwater, Streets	Low Income - <u>Temporary Assistance</u> - Individual must be the resident of the dwelling, must show emergency financial need; <u>Low Income Assistance</u> - must be served at least one of the City services, occupied by the applicant, no delinquency with any City charge, must not exceed gross annual HH income levels established by the Housing Choice Voucher Program (by HH size), must apply every year.	<u>Temporary Program</u> - Max. assistance is \$200 per month, only two months of assistance available every 12 months. Funds are limited and may run out. <u>Low Income Assistance Program</u> - waiver of water base charge, 50% of sewer bill, 50% of stormwater bill, waiver of the street maintenance fee.
Ashland (21,600)	City	Water, Sewer, Electric Currently also gives discount to storm drain and streets	Senior Citizen Low Income , must be age 65+ or 60+ and disabled, must reapply every year, must receive water and sewer service. HH income level capped by Federal poverty income by HH size. Applied to all utility fees (water, sewer, storm drain, transportation). Emergency Credit - account must be no more than \$100 past due.	Senior Citizen Low Income: Year-round discount of 30% if HH income level is at or below 100% of the Fed. Poverty income guidelines or 20% if between 100% and 125%. Emergency Credit: \$100 one-time per year per account only.
Klamath Falls (22,501)	City	Water, Sewer	Senior Citizen Low Income , must reapply every year, must have been a customer the last calendar year, must receive water and sewer service, HH income level capped by Federal poverty income by HH size.	One-time discount applied for water and sewer of \$65.

City Name and Population	City or Agency Handling the Program	Utilities Included	Eligibility and Program Type (Low Income, Senior, Disabled, Other)	Program Description
Newberg (25,767)	City	Water, Sewer	Low Income - must show proof how the HH is income-limited (no MHI test); Active Military & Veteran - no income requirement, must have at least 1 military person in the HH. For both programs must live in Newberg, cannot be >30 days delinquent on account, and must reapply every year.	Both programs - \$25 per month or \$15 per month if no sewer.
West Linn (27,420)	City	Water, Sewer, Surface Water, Street, Parks	Low Income - must live at the address and receive bill in their name, HH income must not exceed 185% of HHS poverty guidelines for Oregon, must reapply every year, water services must be smaller than 1-inch.	Monthly water charges - 50% of customer service and capacity charges, plus 50% off first 700 cubic feet. All other services - 50% off the bill.
Redmond (37,566)	City	Water, Sewer, Stormwater	Low Income - must provide proof of income determined by HH size, only valid for address on the application, does not apply to residences used for business, renewal required every year.	Up to 25% reduction of City utility bill.
Oregon City (37,786)	City	Water, Sewer, Stormwater, Pavement Maint.	Low Income - must provide proof of eligibility (meet LIHEAP requirements) determined by HH size, must renew every year.	Usually about half the total bill; summer water use that exceeds average winter use is billed the full amount.
Albany (57,322)	City but apply through the Community Services Consortium	Water, City Services (provides water, sewer, stormwater)	Low Income - HH gross income is <60% of SMI, amount determined by HH size, must be either a low income senior citizen at least 60 yrs old or a low income disabled person, must recertify every year.	Credit up to 4 HCF per month and 50% of the City Services Fee.
Corvallis (59,434)	City	Water, Sewer	Low Income - Must pay for the City bill, must reapply every year, must participate in the SNAP or Oregon Health Plan or school free lunch program.	Credit up to \$25 per month.
Bend (102,834)	City	Water, Sewer, Stormwater, Garbage possible (depends on income)	Low Income: <u>Utility Billing Assistance</u> - Sewer only customers not eligible. Must have a delinquent balance on water/sewer bill. Must have HH income less than 80% of HUD median income based on HH size. <u>Senior Citizens & Disabled Persons Reduced Sewer and Stormwater Program</u> - must be 62+years or disabled, must renew every 2 years, must provide proof of income eligibility.	<u>Utility Billing Assistance</u> - One-time credit up to \$150. Cannot be combined with the Senior Citizens & Disabled Persons Reduced Sewer and Stormwater Program. <u>Senior Citizens & Disabled Persons Reduced Sewer and Stormwater Program</u> - half off the base rates for sewer and stormwater (about \$23 per month).

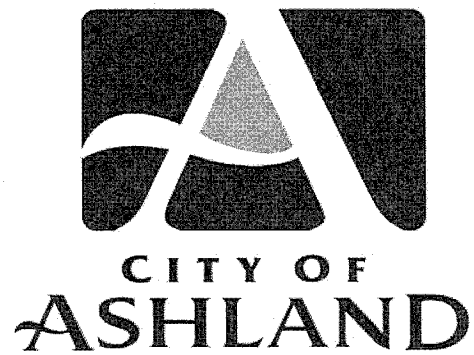
City Name and Population	City or Agency Handling the Program	Utilities Included	Eligibility and Program Type (Low Income, Senior, Disabled, Other)	Program Description
Hillsboro (107,618)	City	Water, Sewer, Transportation, Surface Water Mgm't	Low Income - must receive services from government assistance programs OR have HH income at or below 185% of Federal Poverty Limit for the past 60 days (varies by household size). Must obtain proof of eligibility from a community partner (such as Salvation Army).	Relief may be given on up to 2 bills in a 12-month period; total cannot exceed \$250.
Gresham (114,833)	City	Water, Sewer	Low Income - must have a Gresham utility billing account, program is targeted to HH making <60% of median family income, limited funding for 61%-70% median family income, HH income validation required.	Each application considered individually. Assistance is limited to once per year. Program closes when funds are depleted.
Salem (179,642)	Emergency Program (City); Elderly & Disabled Program (Mid-Willamette Valley Community Action Agency)	Water, Sewer, Garbage	Low Income - Disabled & Elderly Program - must be age 60+ with income at or below 60% SMI, Emergency Program - must meet income guidelines of the Emergency Food Assistance Program, must requalify every year.	Elderly & Disabled program - monthly discount on utility and garbage. Emergency program - Up to \$500 each calendar year.
Portland (647,697)	City	Water, Sewer, Stormwater	Low Income - Up to 60% of MFI, must have a single-family account, must reapply every 2 years, applicant must live at the property, self-report income. Crisis Voucher - additional credit for a temporary crisis (once only every 12 months), must be enrolled in the bill discount program, and must pay some of the bill.	Discount applied to every sewer, water and stormwater bill. Amount depends on income of the HH; typically about \$50 off per month. Crisis Voucher - \$500 one-time discount.

Source: July 1, 2022 population prepared by the Population Research Center, Portland State University.

HH =	Household	LIHEAP =	Low Income Home Energy Assistance Program
MFI =	Median Family Income	MHI =	Median Household Income
HHS =	U.S. Health and Human Services	HUD =	U.S. Department of Housing and Urban Development
SMI =	State (of Oregon) Median Income	SNAP =	Supplemental Nutrition Assistance Program

**HANSFORD ECONOMIC
CONSULTING**

**Water Rate
Cost of Services Study**



March 15, 2016

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Section 1: INTRODUCTION

1.1 PURPOSE OF THE STUDY

The City of Ashland (City) contracted with Hansford Economic Consulting (HEC) to perform a Water Rates Cost of Service Study (Study). The purpose of this Study is two-fold: (1) to ensure that different customer types pay their fair share of water system costs by performing a cost of service analysis and (2) to collect sufficient revenues to adequately fund the water system in a safe manner; providing the residents and businesses of the City with a clean, safe and reliable potable water system that meets State and Federal requirements, by projecting revenue needs and determining a supporting rate schedule.

This report provides an explanation and justification of redistribution of water system costs to customer types and calculated water rates through fiscal year ending 2022. This report has been prepared with the following principles in mind:

- (1) Revenues derived from water fees should not exceed the funds required to provide the water service.
- (2) Revenues derived from water fees should not be used for any purpose other than that for which the fees were imposed.
- (3) Customer water bills should reflect the customer's fair share (proportional) cost of service to provide water to the customer.
- (4) Water fees should only be charged to customers using the service or with the ability to use the service at any time. Water fees should not be charged based on potential or future use of water.

The City conducted a Water Master Plan that was completed in 2012. The Water Master Plan called for several large capital improvement projects and the need to raise water rates to plan for those project costs. The City raised water rates July 2013, 2014, and 2015 by 10% each year as a result of the findings of the Water Master Plan.

Since the 2012 completion of the Water Master Plan the region has experienced a drought. Projected water demands have not been realized, which have resulted in (a) less revenue than anticipated, and (b) greater expenditure in earlier years to complete the Talent-Ashland-Phoenix (TAP) project to augment water supplies. The recent water rate increases were based on percentage increases needed from water sales and not based on cost of service. The City wanted to assess whether customers are paying their proportional share of costs of the water system (not subsidizing among customer types). The City also wanted to ensure that sufficient revenues would be available to pay for projects identified in the Master Plan, as well as other projects identified since completion of the 2012 Master Plan.

Given decreased water demand in recent years the City also anticipated that water rates would have to increase through fiscal year 2022 or necessary capital projects (most particularly a new water treatment plant) would have to be postponed.

1.2 METHODOLOGY

This report was prepared using the principles established by the American Water Works Association (AWWA). The AWWA “Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices M1” (the “M1 Manual”) establishes commonly accepted professional standards for cost of service studies. The M1 Manual general principles of rate structure design and the objectives of the Study are described below.

According to the M1 Manual, the first step in the ratemaking analysis is to determine the adequate and appropriate funding of a utility. This is referred to as the “revenue requirements” analysis. This analysis considers the short-term and long-term service objectives of the utility over a given planning horizon, including capital facilities and system operations and maintenance, to determine the adequacy of a utility’s existing rates to recover its costs. A number of factors may affect these projections, including the number of customers served, water-use trends, nonrecurring sales, weather, conservation, use restrictions, inflation, interest rates, wholesale contracts, water rights agreements, and other changes in operating and economic conditions.

After determining a utility’s revenue requirements, a utility’s next step is determining the cost of service. Utilizing a public agency’s approved budget, financial reports, operating data, and capital improvement plans, a rate study categorizes (functionalizes) the costs, expenses, and assets of the water system among major operating functions to determine the cost of service.

After the assets and the costs of operating those assets are properly categorized by function, the rate study allocates those “functionalized costs” to the various customer classes (e.g., single-family residential, multi-family residential and commercial) by determining the characteristics of those classes and the contribution of each to incurred costs such as peaking factors, different delivery costs, service characteristics and demand patterns. Rate design is the final part of the M1 Manual’s ratemaking procedure. The revenue requirement and cost of service analyses are used to determine appropriate rates for each customer class.

1.3 ORGANIZATION OF THE REPORT

The Study is presented in six sections.

Following this introduction, Section 2 provides a summary of major assumptions and findings of the study. Section 3 provides information on the City’s water system including historical water production and consumption, customer base, historical City growth, and health of the water enterprise fund. Section 4 projects revenue needs, “the revenue requirement”, through fiscal year 2021-22, calculates costs associated with City Talent Irrigation District (TID) non-potable water service, and determines a meter replacement program and its associated costs.

Section 5 presents the cost of service analysis, water demand projections, and details of the calculated water rates. The impacts of the new water rate structure are presented in Section 6, including a comparison of bills with other Oregon water providers.

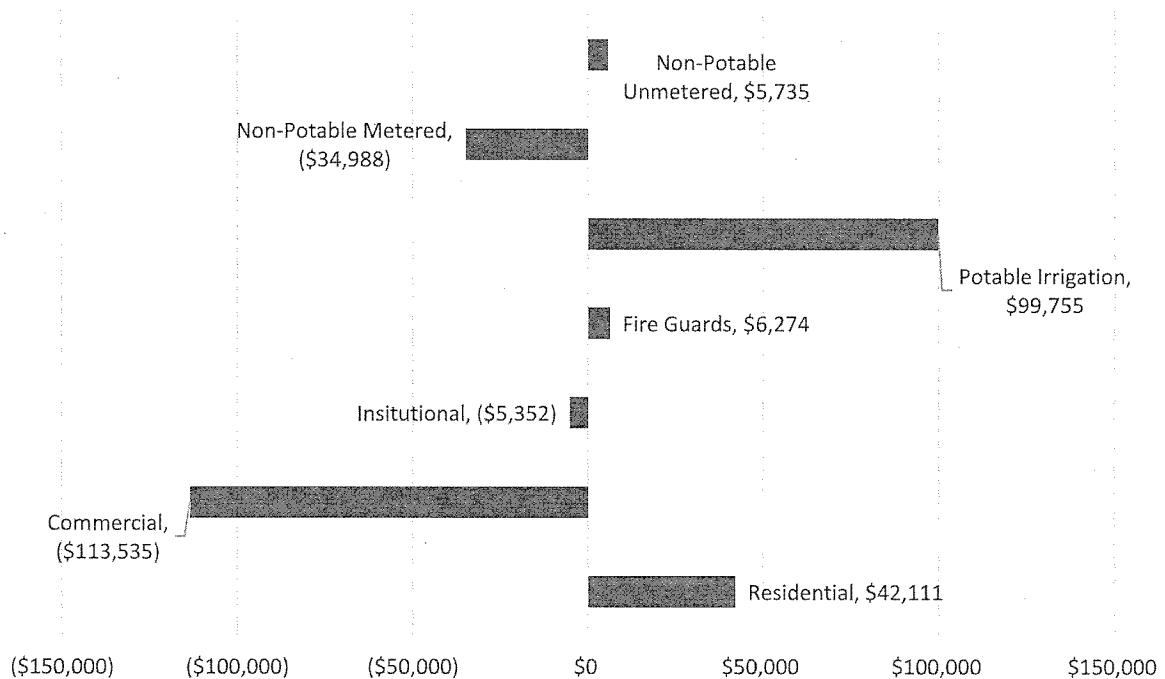
Appendix A includes support tables for the water rates analysis.

Section 2: SUMMARY OF FINDINGS

2.1 MAJOR FINDINGS

Cost of Service. The cost of service analysis finds that commercial, institutional, and non-potable metered irrigation customers are currently paying more than their proportional share of water system costs. Potable irrigation and non-potable unmetered irrigation customers are paying less than their proportional share of water system costs. This is illustrated in **Figure 1** below. Customer types with negative revenue requirement in the illustration should be paying less as a customer group than they are currently paying. Customer types with positive revenue requirement should be paying more as a customer group than they are currently paying. Although residential shows an underpayment of \$42,111, this is a very minimal difference, as it is only 1% of the current cost (see **Table 25**). As a result of the cost of service analysis (see Section 5) the rates from fiscal year 2016-17 onwards shift costs between customer types.

Figure 1
Cost of Service Redistribution of Fiscal Year 2015-16 Revenue Requirement



Costs are allocated to potable customers based on their potential to use system capacity and their water usage characteristics. Costs are allocated to non-potable customers based on typical annual water usage for metered customers and property acreage for unmetered customers.

Rate Structure Modifications. The current rate structure is proposed to be modified to better reflect customer usage patterns and cost of service, ensure accuracy for account billing, and encourage water use efficiency.

- **Flat Charges (All Customers).** Currently bills comprise one flat charge – the monthly service charge. Under the new rate structure bills would continue to have one flat charge which would include the service charge, but it would also include a customer charge for costs associated with administration of the water system and provision of customer service. The customer charge would be the same every month, and the same for every account (accounts with more than one meter only charged once). The service charge would continue to cover the costs of services and meters and a portion of system capacity costs; generally, the costs to be able to provide water service regardless of the amount of water used during a given period. The service charge would continue to apply to each meter at the property.

Service Charge Meter Ratios Change. The service charge meter ratios were adjusted to AWWA meter ratios established using safe maximum operating capacities for meters in the M1 Manual. These meter ratios more accurately capture the capacity of the water service to each customer than the current meter ratios. As a result of this change the larger meter sizes would pay more per month than under the current meter ratios. For 1" meter services the meter ratio was set equal to a ¾" meter to ensure that households required to upsize for fire code requirements are not penalized (this methodology was also used to establish the Forest Resiliency Program Fee in May, 2015 and is being used with greater frequency in cities in other Western U.S. states)¹.

- **Commercial Customers.** Commercial customers are separated into commercial, institutional, and potable water irrigation customers. Institutional customers include the current government/municipal customers. This change is made to better reflect the different customer water demand patterns associated with non-residential activity. The tiers for the new customer categories are also different from the current tiers. The rate structure is intended to fit typical customer usage patterns and promote water use efficiency as well as proportionately allocate the cost of service to those who place the greatest demands on the system.

The table on the following page shows proposed modifications to the non-residential customer tiers. Note that non-residential irrigation water would be charged at on peak and off peak rates. The purpose of seasonal rates for irrigation is to reduce the cost of irrigation water during the spring, fall, and winter months when water supply is not a concern and increase the cost of irrigation water when supplies may be impacted by drought.

¹ Source: HEC experience working with cities in California.

	TIER 1	TIER 2
	Cubic Feet	
CURRENT for ALL NON-RESIDENTIAL	< 50,000	>50,000
NEW	No tier – uniform rate	
INSTITUTIONAL		
IRRIGATION		
COMMERCIAL 2" or less	< 2,500	>2,500
COMMERCIAL >2"	< 15,000	>15,000

- **Residential Customers.** There is no change proposed for residential tiers. Residential customers with separate potable irrigation meters (about 5% of all potable irrigation customers) would pay a service charge each month for each meter but only one customer charge for the account each month. Metered potable irrigation water would be added to the domestic water for calculation of use charges. As the City is converting to new water billing software in 2016 there may be a transition period during which time residential potable irrigation water is billed starting at the Tier 2 rate for residential water. Billing would begin at Tier 2 because average water use is 460 cubic feet per month for indoor use (see **Table 21**) indicating that a typical home would be using some irrigation water in Tier 2. Once the new billing software is in place the irrigation metered use would be added to domestic metered use.
- **Potable Water Irrigation Customers.** All potable irrigation customers (commercial and residential) would be billed the flat monthly charges (service charge and customer charge) year-round rather than only in the months that water is taken as is current practice. Potable irrigation customers would be treated the same as all other potable water customers in this regard, reflecting the ability for the customer to take water at any time of year. This shift from current billing practice may cause some potable irrigation customers to want to discontinue having a separate irrigation meter. This is an option for residential potable irrigation customers.²

2.2 KEY ASSUMPTIONS

Implementation. The new rate structure is assumed to be in effect beginning July 1, 2016 and to be increased each July 1 thereafter. The rate increases would coincide with the fiscal year as is current practice.

Water CIP Projects are funded through rates, connection fees, and City borrowing. Rates and City borrowing will be used to finance capital improvements that benefit existing customers. Connection fees will only be used for projects that are related to new growth in the City. Developer contributions may be required for certain facilities. It is assumed that the City will obtain Safe Drinking Water State Revolving Fund (DWSRF) money to finance construction of the new water treatment plant and Crowson II reservoir. If DWSRF money is not obtained the

² This is not an option for non-residential customers because of sewer billing methodology.

revenue requirement would increase (assuming all other costs do not change) and water rates would have to increase beyond those calculated in this report.

System rehabilitation costs are included in rates. Rates should include depreciation of existing assets so that funds are accumulated and available for replacement of assets on a timely basis, preferably paid for with cash. This Study uses estimated depreciation costs to collect for system rehabilitation. Rate money collected for system rehabilitation is used to fund capital improvement projects for existing customers. In some years system rehabilitation revenue may exceed capital improvement costs. In these years the excess revenue is added to reserves for future rehabilitation projects.

TAP Water Costs. The TAP emergency water pipeline was recently completed. This treated water source will be utilized by the City in late summer or early fall, as needed, to augment supplies. For purposes of the Study it is assumed that water is taken for 31 days each year. The current contract rate is 68 cents per 1,000 gallons of water. In the model it is assumed the cost increases to 75 cents per 1,000 gallons in 2016 and at 3.5% per year each year thereafter.

2.3 CALCULATED RATES

The Study provides a basis for adoption of new rates beginning July 1, 2016. By modifying the rate structure the City will generate sufficient revenue to continue to meet its bond covenants, build a healthy reserve, fund necessary capital improvements, and fully fund water operations.

The revenue requirement, which is the amount of money to be raised by rates, is calculated to increase by the following percentages:

2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
8%	4%	3%	3%	3%	3%

The revenue requirement percentage increases for the next 3 years match those calculated in the 2012 Water Master Plan; however, with the shift in costs between customer categories not all customer categories will experience the same percentage increases.

Table 1 on the following page shows calculated water rates through 2022 for all customer categories and compares the calculated rates with the current rate structure.

Table 2 on page 9 shows the calculated bill for a single family home using 1,000 cubic feet of water in a billing cycle. A typical residential bill would increase from \$51.72 to \$54.35 July 1, 2016.

Table 1
Calculated Water Rates through 2022

Rate Component	Rates Implementation						
	7/1/2015	7/1/2016	7/1/2017	7/1/2018	7/1/2019	7/1/2020	7/1/2021
Monthly Customer Charge per Bill	n.a.	\$11.74	\$12.19	\$12.54	\$12.89	\$13.25	\$13.64
Monthly Service Charge per Meter [1]							
3/4" and Fire Guards	\$23.50	\$13.75	\$14.27	\$14.68	\$15.10	\$15.52	\$15.98
1"	\$46.99	\$14.34	\$14.88	\$15.31	\$15.75	\$16.19	\$16.66
1.5"	\$66.99	\$65.61	\$68.13	\$70.07	\$72.08	\$74.10	\$76.24
2"	\$88.24	\$104.27	\$108.28	\$111.36	\$114.55	\$117.76	\$121.16
3"	\$184.50	\$209.08	\$217.12	\$223.30	\$229.69	\$236.13	\$242.95
4"	\$282.07	\$331.60	\$344.32	\$354.13	\$364.29	\$374.52	\$385.35
6"	\$528.92	\$652.47	\$677.56	\$696.84	\$716.81	\$736.90	\$758.18
8"	\$881.49	\$1,034.38	\$1,074.23	\$1,104.77	\$1,136.39	\$1,168.21	\$1,201.93
USE CHARGES FOR POTABLE WATER							
Residential [2]				per month, per unit			
0 to 300 cf	\$0.0243	\$0.0246	\$0.0256	\$0.0263	\$0.0271	\$0.0278	\$0.0287
301 to 1,000 cf	\$0.0299	\$0.0307	\$0.0319	\$0.0329	\$0.0338	\$0.0348	\$0.0358
1001 to 2,500 cf	\$0.0400	\$0.0415	\$0.0431	\$0.0444	\$0.0457	\$0.0470	\$0.0484
> 2,500 cf (2,501 - 3,600 cf June to Sept)	\$0.0517	\$0.0537	\$0.0559	\$0.0575	\$0.0592	\$0.0609	\$0.0627
> 3,600 cf (June to Sept only)	\$0.0673	\$0.0691	\$0.0719	\$0.0739	\$0.0761	\$0.0783	\$0.0806
Non-Residential				per month, per meter			
0-50,000 cf	\$0.0343	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
> 50,000 cf	\$0.0353	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Commercial <2" meter							
0-2,500 cf	n.a.	\$0.0307	\$0.0319	\$0.0329	\$0.0338	\$0.0348	\$0.0358
> 2,500 cf	n.a.	\$0.0415	\$0.0431	\$0.0444	\$0.0457	\$0.0470	\$0.0484
Commercial 2"+ meter							
0-15,000 cf	n.a.	\$0.0307	\$0.0319	\$0.0329	\$0.0338	\$0.0348	\$0.0358
> 15,000 cf	n.a.	\$0.0415	\$0.0431	\$0.0444	\$0.0457	\$0.0470	\$0.0484
Institutional	n.a.	\$0.0294	\$0.0305	\$0.0314	\$0.0323	\$0.0333	\$0.0342
Commercial and Institutional Irrigation							
October to May	n.a.	\$0.0331	\$0.0345	\$0.0356	\$0.0367	\$0.0378	\$0.0390
June to September	n.a.	\$0.0449	\$0.0469	\$0.0483	\$0.0498	\$0.0513	\$0.0530
Bulk Water [3]	same as non-res.	\$0.0338	\$0.0351	\$0.0362	\$0.0372	\$0.0383	\$0.0394
Fire Protection Service [4]							
Meter Replacement Charge	n.a.	\$1.18	\$1.22	\$1.26	\$1.30	\$1.34	\$1.38
Service Charge	\$23.50	\$13.75	\$14.27	\$14.68	\$15.10	\$15.52	\$15.98
Usage Charges	same as non-res.	\$0.0338	\$0.0351	\$0.0362	\$0.0372	\$0.0383	\$0.0394
TID Non-Potable Water				per irrigation season, per acre or portion of			
Unmetered Service	\$170.01	\$183.11	\$196.20	\$209.30	\$222.40	\$235.50	\$248.59
Metered Service:							
Service Charge	per meter as above	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Meter Replacement Fee [5]	none						
Water Consumption per c.f.	\$0.0055	\$0.0022	\$0.0023	\$0.0024	\$0.0025	\$0.0026	\$0.0026
Outside City Limits							
All rates and charges for water service provided outside the city limits will be 1.5 times the inside city rates and charges.							

Source: City of Ashland.

[1] Irrigation customers currently only billed charges when the service takes water. Effective July 1, 2016 these customers will be charged the flat monthly fees every month regardless of whether water is taken.

[2] For residential customers with separate irrigation meters the metered irrigation water is added to the domestic water use.

[3] For temporary water provided through a bulk meter on a fire hydrant.

[4] This rate shall apply to all water taken through fire protection services or fire guards.

[5] Due once per year on first TID non-potable water bill.

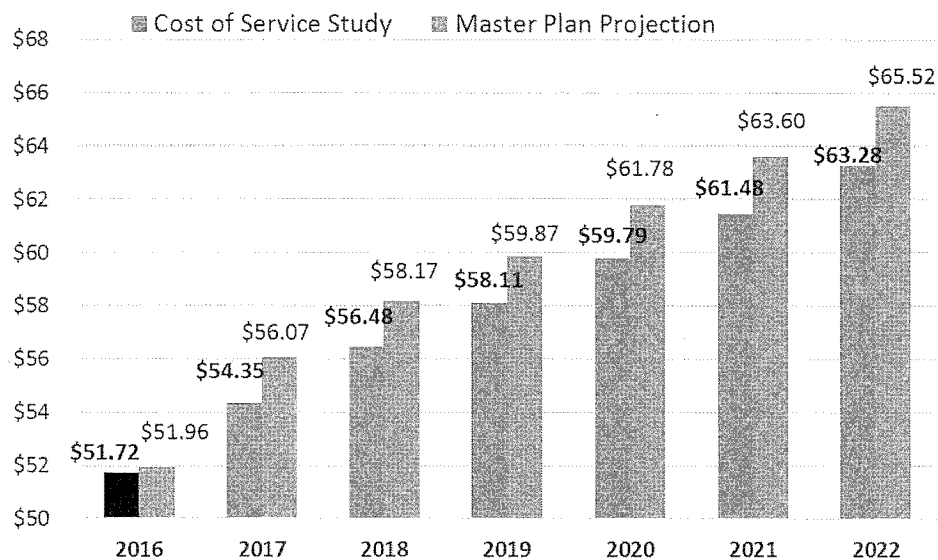
Table 2
Calculated Typical Home Bill for 1,000 Cubic Feet

Residential Charges	Fiscal Year Ending						
	2016 <i>current</i>	2017 1	2018 2	2019 3	2020 4	2021 5	2022 6
Flat Charges							
Customer Charge		\$11.74	\$12.19	\$12.54	\$12.89	\$13.25	\$13.64
Service Charge	\$23.50	\$13.75	\$14.27	\$14.68	\$15.10	\$15.52	\$15.98
Total Flat Charges	\$23.50	\$25.48	\$26.46	\$27.21	\$27.99	\$28.78	\$29.61
Use Charges							
Tier 1 per cu. ft.	\$0.0243	\$0.0246	\$0.0256	\$0.0263	\$0.0271	\$0.0278	\$0.0287
Tier 2 per cu. ft.	\$0.0299	\$0.0307	\$0.0319	\$0.0329	\$0.0338	\$0.0348	\$0.0358
Tier 1 Charges (300 cu ft)	\$7.29	\$7.37	\$7.67	\$7.89	\$8.12	\$8.35	\$8.60
Tier 2 Charges (700 cu ft)	\$20.93	\$21.50	\$22.36	\$23.01	\$23.68	\$24.35	\$25.07
Total Use Charges	\$28.22	\$28.87	\$30.02	\$30.89	\$31.80	\$32.70	\$33.67
Bill for 3/4" using 1,000 cu. ft.	\$51.72	\$54.35	\$56.48	\$58.11	\$59.79	\$61.48	\$63.28
Percentage Increase		5%	4%	3%	3%	3%	3%

Source: HEC.

Figure 2 shows the calculated bill for a single family home with a ¾" meter using 1,000 cubic feet in the cost of service study compared to the master plan projections through 2022. Bills may be lower or higher than shown depending on actual quantity of water used.

Figure 2
Typical Monthly Bill for ¾" Single Family Home



2.4 RATE IMPACTS

Residential. In 2016 residential water bills would experience increases of about 5% rather than the full 8% increase in revenue requirement because of the cost redistribution between customers. The bills for residential customers will remain affordable per the Oregon Drinking Water State Revolving Fund program definition (see Section 6).

Commercial. Many commercial water bills would decrease under the new rate structure in 2016. The reduction in bills is also due to the reallocation of costs under the cost of service analysis. Commercial customers with 2" and larger meters would pay a larger portion of their bill as a flat monthly charge due to the change in service charge meter ratios to AWWA safe maximum operating capacities for meters. Larger water meter commercial customers would have higher bills in 2016.

Institutional. Institutional customers would experience a slight increase in bills in the winter months and a decrease in bills in the summer months. Institutional customers have a relatively flat demand throughout the year, with a slight peak in the spring months before the irrigation season begins, so the change to a uniform use charge (the same rate per 1,000 gallons is charged regardless of total water use) is appropriate.

Potable Irrigation. During the peak summer months potable irrigation bills would increase in 2016 due to cost redistribution. The new rate design is intended to curb irrigation water use during the peak use months by having a higher "on peak" rate per 1,000 gallons June through September. During off-peak months (October through April) water bills would increase if no water was taken. This reflects billing the flat monthly charges regardless of whether water is used or not. For accounts using water during the off-peak, irrigation bills would decrease. The off-peak potable irrigation water rate encourages planting in spring and fall months when water supply is not a concern.

TID Non-Potable Water Irrigation. The unmetered customers' rate would increase from \$170.01 per acre to \$183.11 per acre July 1, 2016 as a result of cost redistribution. The TID metered customer rate would decrease from \$0.0055 per cubic foot to \$0.0022 per cubic foot July 1, 2016. In addition, TID metered customers would pay a meter replacement fee.

Section 3: CURRENT CONDITIONS

3.1 CITY WATER SYSTEM

The City operates a surface water supply system. The main water supply is from Ashland Creek and reservoir. This water is treated at a City owned and operated water treatment plant. Treated water enters the distribution system from this point and either flows directly to customers or to one of 4 reservoirs (water tanks) located in the City. In 2014 the TAP water supply was completed to Ashland. The City can take up to 2.13 million gallons per day (mgd) in emergency water supplies from the Medford Water Commission. This water source will be used in late summer or early fall as needed to augment supplies. In addition to these two sources of treated water the City also obtains water from the Talent Irrigation District (TID). Non-potable TID water is supplied to irrigation customers located along the TID canal. Under terms of the contracts with TID the City may also use the water for potable water demands. When used for potable needs, water from the canal is diverted to the Ashland Creek water treatment plant where it is treated and enters the City's potable water distribution system.

Potable water production averages 46 million gallons per month during the winter months (December through March). Peak month production is July or August when production averages 152 million gallons per month. The highest month production in the past 6 years was 180 million gallons in July 2009. **Table 3** shows historical potable water production.

Table 3
Historical Potable Water Production

Month Year	Calendar Year						Avg. Annual Water Delivery (MG)	Percent of Delivery by Month
	2009	2010	2011	2012	2013	2014		
Figures in Millions of Gallons								
January	51.06	48.16	48.88	48.07	42.97	42.38	46.92	5%
February	44.48	41.77	44.11	44.96	36.98	37.36	41.61	4%
March	48.71	47.54	47.18	47.65	42.45	41.71	45.87	5%
April	64.90	48.40	48.70	53.24	54.76	56.41	54.40	5%
May	105.77	59.31	60.78	90.64	90.46	97.70	84.11	8%
June	124.39	88.51	88.77	109.75	117.26	119.26	107.99	11%
July	180.38	157.48	135.27	133.40	170.48	137.17	152.36	15%
August	167.64	158.29	152.00	149.87	155.29	131.38	152.41	15%
September	116.02	114.52	131.36	124.35	114.30	104.15	117.45	12%
October	69.73	86.43	82.60	81.33	99.24	83.61	83.83	8%
November	48.97	51.89	54.13	45.01	81.63	55.40	56.17	6%
December	51.26	47.26	49.63	40.50	52.97	51.01	48.77	5%
Total	1,073.32	949.57	943.42	968.78	1,058.79	957.53	A 991.90	100%
Base Monthly Flow (Dec - Mar)						B	45.79	
Average Annual Base Flow						C = B*12	549.53	55%
Average Annual Additional Flow						D = A-C	442.37	45%

Source: City of Ashland.

Water production includes Ashland Creek and TAP water supplies. Annual base water production is the winter monthly average production multiplied by 12. Base water production comprises 55% of annual production. Additional flow to meet demands that pick up during the spring, summer, and fall months comprises 45% of annual production.

Historical water consumption is shown in **Table 4**. Due to billing cycles, consumption by month in the table reflects the amount of water billed each month which is not exactly the same as total water used in each month; however, the pattern of use is very similar with peak month usage typically in July or August. **Figure 3** shows the seasonal pattern of water consumption.

Figure 3
Annual Water Consumption by Month

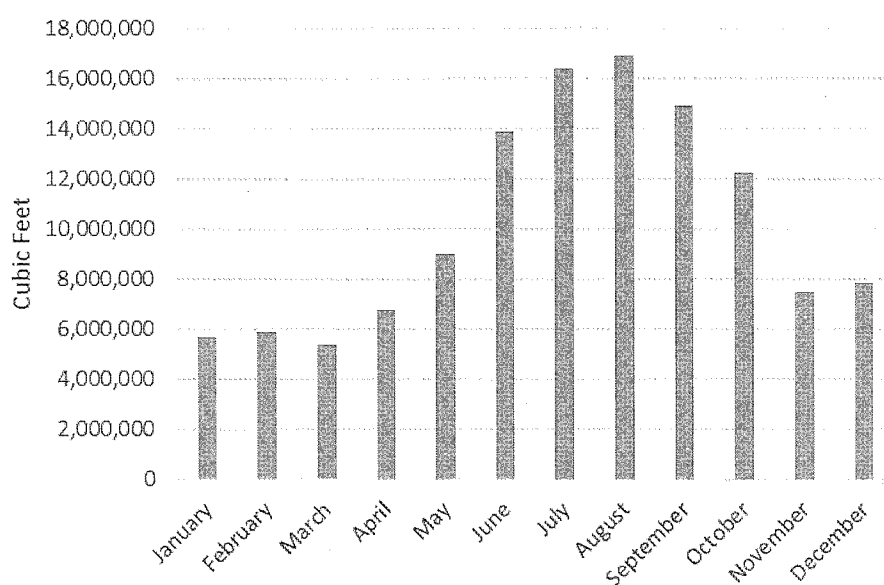


Table 4 compares potable water consumption and production. The figures show that about 4.5% of water produced is unbilled or unaccounted for. This figure is considered healthy for a water system³.

The total annual water usage billed increased 13% between 2010 and 2013 then fell back to almost the same level as 2010 in 2014. The decrease in water use between 2013 and 2014 is probably largely due to the drought. Oftentimes a decrease such as this can be sustained for many years, particularly if followed by another drought year, as has been the case in 2015. Referred to as ‘demand hardening,’ customers become accustomed to using less water. During the drought years they have retrofitted fixtures and reset irrigation clocks or changed out landscaping to reduce their water use.

³ “Most states have regulatory policies that set acceptable losses from public water system distribution systems at a maximum of between 10 and 15 percent of the water produced by the public water system.”, page vii of ‘Control and Mitigation of Drinking Water Losses in Distribution Systems’, EPA November 2010 publication.

Table 4
Historical Water Consumption

Month	Calendar Year				
	2010	2011	2012	2013	2014
Consumption	<i>Figures in Cubic Feet</i>				
January	5,688,024	6,377,053	5,822,654	6,398,479	5,698,647
February	5,099,644	5,088,576	5,264,148	5,106,362	5,903,155
March	5,997,480	5,766,127	6,218,217	6,620,823	5,395,848
April	6,277,962	5,688,600	5,835,945	6,921,512	6,737,313
May	6,175,787	6,517,554	9,374,536	11,570,159	9,004,008
June	10,178,300	10,104,520	13,707,604	15,747,969	13,874,124
July	15,731,277	14,807,946	17,927,282	20,205,591	16,364,166
August	20,686,522	18,804,858	20,516,243	21,154,339	16,915,748
September	17,851,518	19,930,790	17,585,640	16,960,380	14,895,165
October	11,796,560	13,546,376	16,327,008	9,331,983	12,225,379
November	7,824,931	7,349,883	7,001,274	7,667,451	7,481,362
December	5,685,693	6,519,096	6,151,560	6,465,232	7,819,658
Total Consumption (Cu. Ft.)	118,993,698	120,501,379	131,732,111	134,150,280	122,314,573
Total Consumption (Gallons)	890,072,861	901,350,315	985,356,190	1,003,444,094	914,913,006
Millions of Gallons Billed	890	901	985	1,003	915
Millions of Gallons Produced [1]	950	943	969	1,059	958
Production less Consumption	59	42	-17	55	43
Production as % of Billing	6.3%	4.5%	-1.7%	5.2%	4.5%

Source: City of Ashland.

[1] Includes TAP water of 6.3 MG in 2014. Production figures for 2012 unreliable due to calibration difficulties at the plant.

In selecting a base year as a platform for water use from which to project water demand over the Study time period it would be best to either use the average of the last five years or the most recent year of water use. This Study projects water use based on the most recent year of water use (2014). Unlike the Water Master Plan, in which the core objective is to ensure sufficient capacity is available for a 'worst case' growth in demand scenario (maximum likely use), this Study needs to ensure sufficient revenue is available in a 'best case' growth in demand scenario under which there are minimum increases in water use. The average annual water use of the last 5 years was 939 million gallons. The Study uses the 2014 use of 915 million gallons as the base for projecting water demand.

Over the same five-year period (2010-2014) the population of Ashland increased very slightly from an estimate of 20,100 to 20,300. Gallons of water produced per capita per day has remained flat at 129. Ashland's population growth and gallons per capita per day is shown in **Table 5**.

Table 5
City Population Growth

Year	Certified Population Estimate	Annual Change	Annual % Change	Water Production Gallons per Capita per Day
	1-Jul			
2000	19,610			
2001	19,770	160	0.8%	
2002	20,130	360	1.8%	
2003	20,430	300	1.5%	
2004	20,590	160	0.8%	
2005	20,880	290	1.4%	160
2006	21,430	550	2.6%	161
2007	21,630	200	0.9%	154
2008	21,485	-145	-0.7%	153
2009	21,505	20	0.1%	137
2010	20,095	-1,410	-6.6%	129
2011	20,255	160	0.8%	128
2012	20,325	70	0.3%	131
2013	20,295	-30	-0.1%	143
2014	20,340	45	0.2%	129
Change	730	52		
Average Annual Population Increases		0.26%		

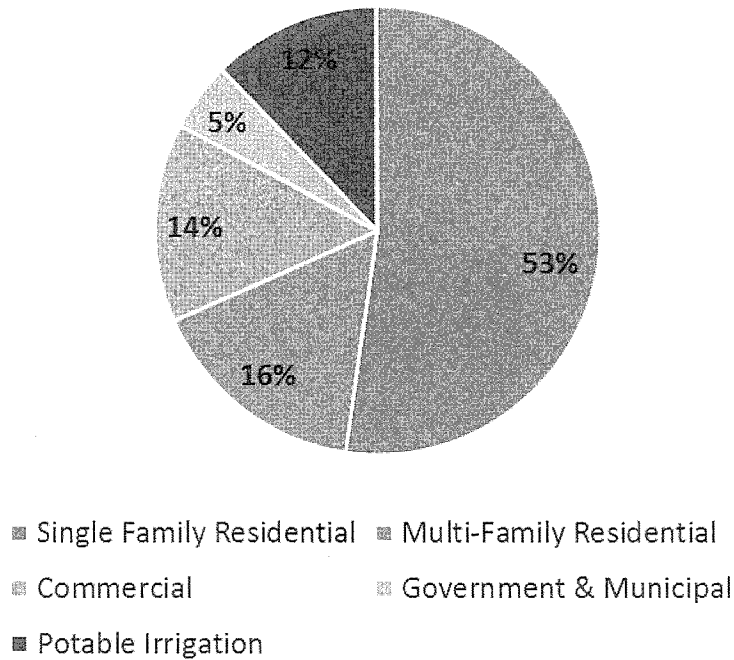
Source: Portland State University Population Research Center -
www.pdx.edu/prc and Carollo 2012 City of Ashland Comprehensive Water Master Plan.

3.2 CUSTOMER BASE

As shown in **Table 5**, the City services a population of approximately 20,300 and it has sustained an annual average population increase of 0.26% since 2000. City water customers include residential (single family and multi-family), commercial, institutional (government/municipal), potable irrigation and non-potable irrigation (TID) customers. **Figure 4** shows water use by customer type. The figure excludes water use by the non-potable irrigation customers.

As the pie chart shows, the majority of City water use (69%) is by residential customers.

Figure 4
Water Use by Customer Type



3.3 THE WATER FUND

The water enterprise fund accounts for the revenues and expenses associated with operating the water system.⁴

Revenues. Historically, 61% of the water enterprise fund's operating revenue has been derived from water sales. Other operating revenue includes bond proceeds, system development charges (SDCs), new service installation fees, inter-government revenues, interest, and other miscellaneous revenues. **Table A-1** shows historical and budgeted water fund revenues. **Figure 5** shows the typical annual share of revenues by source.

Water sales by customer type is shown in **Figure 6**.

⁴ An enterprise fund is a fund that is intended to recover its costs through user fees and charges. Enterprise funds also provide the repayment capacity for, and make debt service payments on, any debt incurred for capital projects associated with the utility; therefore, any water enterprise fund bond-funded projects do not diminish the City's general fund debt capacity.

Figure 5
Typical Annual Sources of Water Fund Revenue

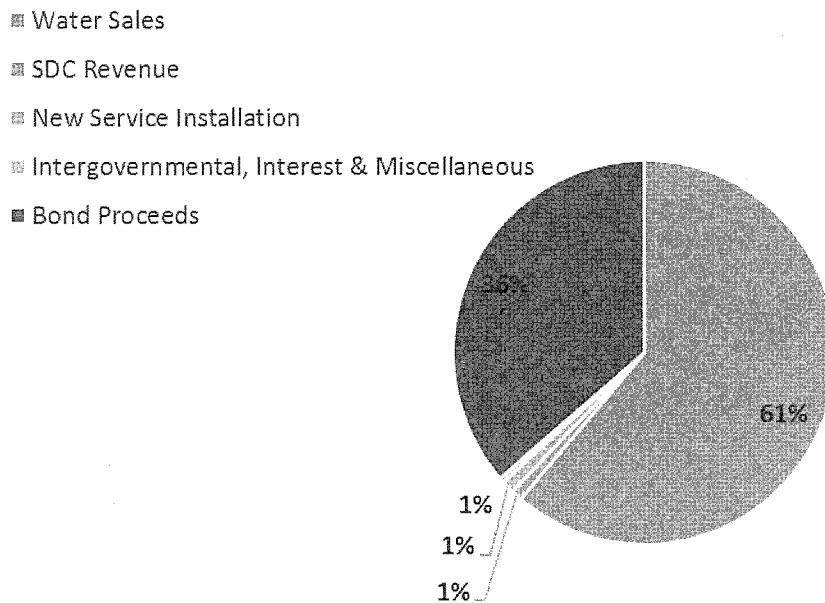
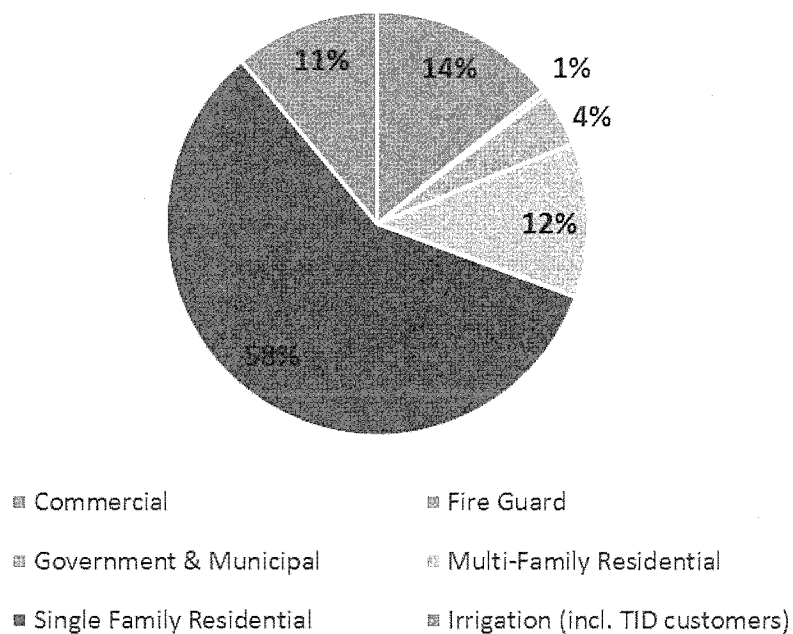


Figure 6
Water Sales by Customer Type



Rate revenue is generated according to the current water rate schedule shown in **Table 6**. Customers are billed fixed service charges according to their water meter size plus use charges.

Table 6
Current Water Rates

Rate Component			Rate Schedule 7/1/2015
Monthly Service Charge			Within City Limits
Meter Size			
3/4"			\$23.50
1"			\$46.99
1.5"			\$66.99
2"			\$88.24
3"			\$184.50
4"			\$282.07
6"			\$528.92
8"			\$881.49
Usage Charges			
Residential [1]			
			October - May
0 to 300 cf	per month	per unit	\$0.0243
301 to 1,000 cf	per month	per unit	\$0.0299
1,001 to 2,500 cf	per month	per unit	\$0.0400
> 2,500 cf	per month	per unit	\$0.0517
			June - September
0 to 300 cf	per month	per unit	\$0.0243
301 to 1,000 cf	per month	per unit	\$0.0299
1,001 to 2,500 cf	per month	per unit	\$0.0400
2,501 to 3,600 cf	per month	per unit	\$0.0517
> 3,600 cf	per month	per unit	\$0.0673
Non-Residential [1]			
0-50,000 cf	per month		\$0.0343
> 50,000 cf	per month		\$0.0353
TID Irrigation Rates			
Unmetered Service	per acre or portion of		\$170.01
Metered Service	Base Service Charge	per meter as above	
	Water Consumption per cf		\$0.0055
Bulk Water Rate			
For water provided on a temporary basis through a bulk meter on a fire hydrant			
Deposit			\$1,859.28
Basic Fee			\$234.77
Cost of Water		same as non-residential	
Fire Protection Service			
This rate shall apply to all fire protection services or fire guards. The basic service charge will be equal to the minimum basic service charge. Water will be billed at non-residential rates.			
Outside City Limits			
All rates and charges for water service provided outside the city limits will be 1.5 times the rates for water service provided within the city limits.			

Source: City of Ashland.

[1] Irrigation customers only billed when the service takes water.

New development pays System Development Charges (SDC) fees to pay for new facilities necessary to accommodate the increased demand associated with new customers. The current SDC fee schedule is shown in **Table 7**. SDC charges are not updated as part of this Study.

Table 7
Water System Development Charges

Applicant	SDC Charges		
	Reimbursement	Improvement	Total
Residential			
All, per Sq. Ft. Habitable Area	\$0.9318	\$1.6751	\$2.6069
Commercial & Industrial			
Meter Size			
3/4"	\$1,792.89	\$3,084.22	\$4,877.11
1"	\$2,988.75	\$5,140.43	\$8,129.18
1.5"	\$5,975.70	\$10,280.87	\$16,256.57
2"	\$9,561.48	\$16,448.58	\$26,010.06
3"	\$20,917.65	\$35,983.04	\$56,900.69
4"	\$35,857.80	\$61,685.21	\$97,543.01
6"	\$74,704.35	\$128,508.83	\$203,213.18
8"	\$107,573.40	\$185,053.61	\$292,627.01

Source: Economic & Financial Analysis, June 5, 2014.

Water customers are also charged a fixed monthly fee by water meter size for the Ashland Forest Resiliency Program. This new fee was adopted by City Council in May 2015 and is also not part of the Study. The Forest Resiliency Program was included in the Water Fund prior to fiscal year 2015-16. It is now part of public safety. The Forest Resiliency Program fee schedule is shown in **Table 8** on the following page.

Expenses. The water fund incurs annual expenses for supply, distribution, treatment plant, and conservation functions. Costs for these functions are further grouped into ten categories in the Study:

Personnel (includes benefits)	Supplies
Repair & Maintenance	Communications
Contractual Services	Central Service
Miscellaneous Charges	Other Purchased Services
Conservation Programs	Franchise Tax

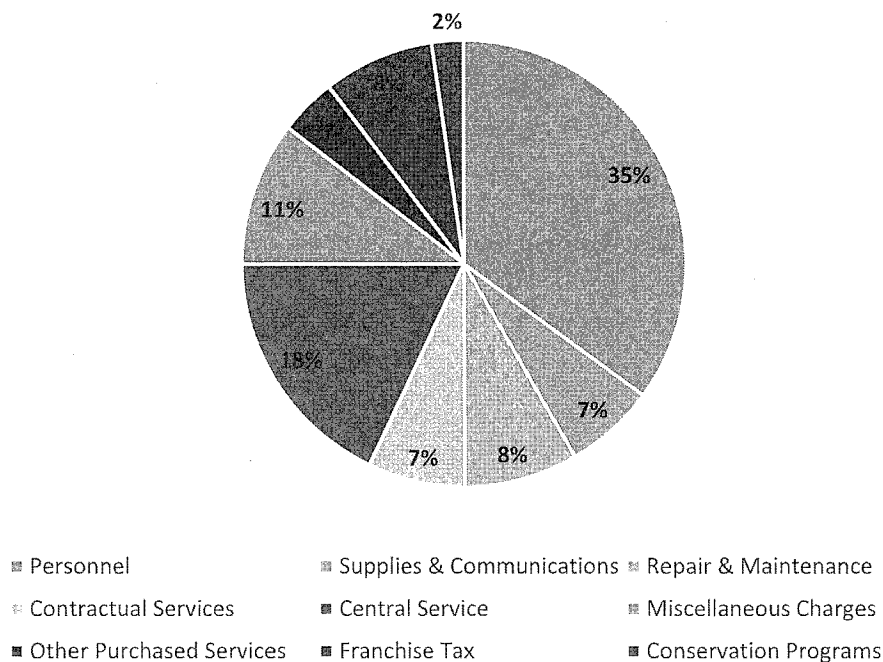
Table 8
Forest Resiliency Program Fee Schedule

Meter Size	Monthly Charge
3/4"	\$1.39
1"	\$1.39
1.5"	\$6.95
2"	\$11.12
3"	\$22.24
4"	\$34.75
6"	\$69.50
8"	\$111.20

Source: Resolution 2015-14 adding a surcharge to water meters for the purpose of generating and dedicating general fund resources for additional work in the forest interface as part of the Ashland Forest Resiliency Program, May 2015.

Over the past six years personnel costs (including salaries and benefits), central service costs (support from other departments allocated to water), and miscellaneous costs have been the largest expenditure items. Personnel costs have comprised approximately 35 percent of annual costs of the water utility. The percentage share of fiscal year 2015-16 budgeted expenses by expense category is shown in **Figure 7**.

Figure 7
Typical Annual Water Fund Expenses



An addition to the fiscal year 2015-16 budget is the cost of TAP water. This new water source first came online in the fall of 2014. The City anticipates using this water source one month every year in typical water years.

Table A-2 shows historical and budgeted expenditures by water system function. Operations expenditures are summarized in **Table A-3**.

Water Fund Balance. In 2010 and 2011 the water fund was unable to sustain itself. Inter-fund loans from other City funds were used to pay for operations of the water system. Following an increase in revenue in 2013 as a result of the completion of the Water Master Plan and implementation of increased rates, the water fund was able to sustain itself. The water fund balance increased from \$2.7 million to \$6.4 million. The inter-fund loans were repaid. The water fund balance decreased in fiscal years ending 2014 and 2015 (the last 2 fiscal years) to \$5.2 million as revenues decreased due to the drought (despite rate increases over the same time period). Bond proceeds have been used increasingly since 2013 to fund major capital improvements. The historical water fund balance is shown in **Table 9** below.

Table 9
Historical Water Fund Balance

Water Fund	Fiscal Year Ending					
	2010	2011	2012	2013	2014	2015
Revenues	\$4,455,768	\$4,806,604	\$5,745,624	\$8,280,514	\$6,322,141	\$6,604,338
Expenses	\$5,007,651	\$4,996,091	\$5,049,115	\$6,899,636	\$7,315,933	\$8,414,077
Excess (Deficiency)	(\$551,883)	(\$189,487)	\$696,509	\$1,380,878	(\$993,792)	(\$1,809,739)
Other Financing Sources	\$80,000	\$550,000	(\$200,000)	\$2,347,791	\$829,630	\$744,916
	<i>Interfund loan</i>	<i>Interfund loan</i>	<i>repayment of interfund loan</i>	<i>repayment of interfund loan & bond proceeds</i>	<i>repayment of interfund loan & bond proceeds</i>	<i>bond proceeds</i>
Net Change in Fund Balance	(\$471,883)	\$360,513	\$496,509	\$3,728,669	(\$164,162)	(\$1,064,823)
Fund Balance July 1	\$2,323,768	\$1,851,885	\$2,212,398	\$2,708,907	\$6,437,576	\$6,273,414
Fund Balance June 30	\$1,851,885	\$2,212,398	\$2,708,907	\$6,437,576	\$6,273,414	\$5,208,591

Source: City of Ashland CAFRs.

Section 4: FINANCIAL PROJECTIONS

4.1 REVENUE REQUIREMENT

The revenue requirement refers to the amount of money that must be raised annually through rates. The projection of revenue requirement is therefore the cornerstone for calculation of rates. This section explains the derivation of revenue requirement for this Study. Components of revenue requirement include:

- Capital Improvements
- Debt Service
- System Rehabilitation
- Operations Expenses and Reserves

City TID non-potable water sales revenue as well as other non-water sales revenue projections are credited against projected operations costs. Non-water sales include intergovernmental revenue, interest on investments, new service installation revenue, and other miscellaneous revenues.

4.1.1. Capital Improvements

The City's water system capital improvements plan (CIP) is shown in **Table A-4**. The table shows costs in inflated dollars to account for the increased cost of infrastructure over time. Project costs are increased 3.12% per year for inflation per the historical 1995-2015 20-year Engineering News-Record Construction Cost Index (ENR CCI) average annual increase.

The table only shows costs to be borne by existing customers. Improvements that benefit future customers will be paid for with system development charges. Total CIP costs benefiting existing customers is summarized in **Table 10**. Total costs (inflated) are estimated at \$28.6 million. Of this total, \$20.3 million (70%) is for the new water treatment plant and reservoir identified in the Master Plan.

Of the total identified \$28.6 million (inflated costs) in improvements, \$20.3 million is assumed to be funded with SRF loans, \$2.1 million is assumed to be funded with bond proceeds, \$3.8 million with cash raised by rates specifically for system rehabilitation, \$0.4 million with other water fund cash, and \$2.0 million with use of restricted reserves for capital improvements.

4.1.2. Debt Service

Existing debt service of the water fund is shown in **Table A-5**. Existing debt comprises City general obligation bonds as well as Medford Water Commission debt and State of Oregon revolving fund loan debt for the TAP project. State of Oregon revolving fund loan debt payments are estimated to begin in fiscal year 2017-18.

New debt service estimates for projects bond-funded by the City are shown in **Table A-6**. **Table A-7** shows the assumptions and debt service for financing the new water treatment plant and Crowson II reservoir with the Oregon DWSRF program.

Table 10
Summary of 10-Year CIP for Existing Customers

Item	Total	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
Total Project Costs (inflated dollars)	\$28,624,250	\$4,323,240	\$12,072,625	\$10,595,310	\$282,400	\$546,475	\$469,200	\$335,000
System Rehabilitation Cash [1]	\$3,792,224	\$0	\$1,004,428	\$1,154,721	\$282,400	\$546,475	\$469,200	\$335,000
Cash Funded (Rates)	\$402,240	\$402,240	\$0	\$0	\$0	\$0	\$0	\$0
Use of Restricted Reserves [2]	\$1,965,726	\$0	\$1,933,647	\$32,079	\$0	\$0	\$0	\$0
Treatment Plant (SRF Funded)	\$13,041,810	\$1,043,370	\$5,910,570	\$6,087,870	\$0	\$0	\$0	\$0
Crowson II (SRF Funded)	\$7,322,940	\$778,320	\$3,223,980	\$3,320,640	\$0	\$0	\$0	\$0
Bond Funded	\$2,099,310	\$2,099,310	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$28,624,250	\$4,323,240	\$12,072,625	\$10,595,310	\$282,400	\$546,475	\$469,200	\$335,000

Source: HEC

[1] During years that system rehabilitation cash collection is greater than the CIP, monies will be restricted for capital improvements.

[2] Reserves restricted for capital improvement projects.

4.1.3. System Rehabilitation

Depreciation is used as the basis for which to collect rates to cover system rehabilitation costs. It is recommended that the City collect water rates to fund system rehabilitation costs. **Table 11** shows the estimated cost of depreciation of the water system. The estimated cost includes replacement of existing assets and assets that are estimated to be constructed during the Study time period (see **Table A-8**).

Table 11
Estimated Water System Assets Depreciation

Assets	Annual Depreciation						
	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
Existing Assets							
Water Rights	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Buildings	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$11,832	\$8,189	\$1,390	\$1,390	\$1,390	\$1,390	\$1,390
Improvements	\$676,083	\$673,081	\$663,935	\$663,935	\$663,735	\$661,981	\$657,684
Total Existing	\$687,915	\$681,270	\$665,325	\$665,325	\$665,126	\$663,371	\$659,074
New Assets							
Improvements	\$121,580	\$323,159	\$489,396	\$494,288	\$503,811	\$511,829	\$517,412
Total New	\$121,580	\$323,159	\$489,396	\$494,288	\$503,811	\$511,829	\$517,412
Combined Existing & New	\$809,495	\$1,004,428	\$1,154,721	\$1,159,613	\$1,168,937	\$1,175,200	\$1,176,486
% Included in Rates		100%	100%	100%	100%	100%	100%
Amount In Rates		\$1,004,428	\$1,154,721	\$1,159,613	\$1,168,937	\$1,175,200	\$1,176,486

Source: City of Ashland and HEC.

4.1.4. Operations Expenses and Reserves

Table A-9 shows that operations costs of the water fund have increased at an average annual rate of 3.4% since 2010. This average annual increase is compared with a 2.7% Engineering News Record (ENR) Construction Cost Index (CCI) increase and 1.8%-2.2% Consumer Price Index (CPI) indexes. It is typical for utilities costs to increase at a faster rate than the price indexes shown.

This Study recommends using average annual increases of 4.0% for personnel costs, 3.5% for TAP water costs, and 3.0% for all other operating costs.

4.1.5. Calculated Revenue Requirement

Table 12 on the next page estimates the revenue requirement of the water fund for the next 10 years. In fiscal year 2015-16 the revenue requirement is calculated at \$5.78 million. The City projects revenues of \$6.52 million. Any realized additional revenue will be reserved for capital improvements identified in the Water Master Plan.

Table 12
Projected Revenue Requirement

Revenues and Expenses		2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
Operating Expenses								
Personnel	4.0%	\$1,737,310	\$1,806,802	\$1,879,074	\$1,954,237	\$2,032,407	\$2,113,703	\$2,198,251
Supplies	3.0%	\$305,825	\$315,000	\$324,450	\$334,183	\$344,209	\$354,535	\$365,171
Repair & Maintenance [1]	3.0%	\$410,512	\$359,827	\$370,622	\$381,741	\$393,193	\$404,989	\$417,139
Communications	3.0%	\$22,380	\$23,051	\$23,743	\$24,455	\$25,189	\$25,945	\$26,723
Contractual Services	3.0%	\$353,600	\$364,208	\$375,134	\$386,388	\$397,980	\$409,919	\$422,217
Central Service	3.0%	\$887,650	\$914,280	\$941,708	\$969,959	\$999,058	\$1,029,030	\$1,059,901
Miscellaneous Charges	3.0%	\$517,020	\$532,531	\$548,507	\$564,962	\$581,911	\$599,368	\$617,349
Other Purchased Services	3.0%	\$207,320	\$213,540	\$219,946	\$226,544	\$233,340	\$240,341	\$247,551
Franchise Tax	3.0%	\$402,653	\$414,733	\$427,175	\$439,990	\$453,189	\$466,785	\$480,789
Conservation Programs	3.0%	\$114,500	\$117,935	\$121,473	\$125,117	\$128,871	\$132,737	\$136,719
TAP Water [2]	3.5%	\$44,000	\$48,000	\$50,000	\$52,000	\$54,000	\$56,000	\$58,000
Subtotal Operating Expenses		\$5,002,770	\$5,109,906	\$5,281,831	\$5,459,577	\$5,643,347	\$5,833,351	\$6,029,809
Debt Service								
Existing Debt (City bonds)		\$453,291	\$451,941	\$450,491	\$453,891	\$457,091	\$450,191	\$448,241
Existing Debt Medford Water Commission		\$163,768	\$163,768	\$163,768	\$163,768	\$163,768	\$163,768	\$163,768
Existing Debt (IFA note)		\$0	\$0	\$157,000	\$103,000	\$103,000	\$103,000	\$103,000
New City Debt [3]	Table A-6		\$188,000	\$188,000	\$188,000	\$188,000	\$188,000	\$188,000
New SRF Debt	Table A-7		\$53,736	\$313,722	\$581,505	\$1,145,400	\$1,145,400	\$1,145,400
Subtotal Debt Service		\$617,059	\$857,445	\$1,272,981	\$1,490,164	\$2,057,259	\$2,050,359	\$2,048,409
Capital Outlay Cash Funded		\$402,240	\$0	\$0	\$0	\$0	\$0	\$0
System Rehabilitation		\$0	\$1,004,428	\$1,154,721	\$1,159,613	\$1,168,937	\$1,175,200	\$1,176,486
Operating Reserves		\$0	\$310,000	(\$105,000)	(\$245,000)	(\$735,000)	(\$650,000)	(\$555,000)
Subtotal Annual Cost		\$6,022,069	\$7,281,780	\$7,604,533	\$7,864,353	\$8,134,543	\$8,408,910	\$8,699,704
Credits								
New Service Installation	2.0%	\$114,800	\$117,096	\$119,438	\$121,827	\$124,263	\$126,748	\$129,283
Intergovernmental Revenue	constant	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000	\$14,000
Interest on Investments	constant	\$20,400	\$20,400	\$20,400	\$20,400	\$20,400	\$20,400	\$20,400
Miscellaneous	2.0%	\$12,000	\$12,240	\$12,485	\$12,734	\$12,989	\$13,249	\$13,514
Non-Potable Water (TID) Charges	Table 14	\$80,742	\$50,800	\$53,727	\$56,676	\$59,632	\$62,642	\$65,663
Subtotal Credits		\$241,942	\$214,536	\$220,050	\$225,637	\$231,284	\$237,040	\$242,860
REVENUE REQUIREMENT		\$5,780,127	\$7,067,244	\$7,384,483	\$7,638,716	\$7,903,258	\$8,171,870	\$8,456,844
base								
Change from Base Year Water Sales		\$6,515,358	\$551,886	\$869,124	\$1,123,358	\$1,387,900	\$1,656,512	\$1,941,485
Annual Change			\$551,886	\$317,239	\$254,234	\$264,542	\$268,612	\$284,974
Percentage Change			8%	4%	3%	3%	3%	3%

Source: HEC.

[1] Maintenance costs reduced in year 1 by \$63,000 which is the average amount spent on meter replacement in the City each year currently.

Meter replacement costs will be recouped in the new meter replacement monthly charges.

[2] Assumes 2.13 mgd for 31 days/year. In 2015 the cost is 68 cents per 1,000 gallons. The cost is assumed to increase to 75 cents per 1,000 gallons. in 2016 and thereafter 3.5% per year in the model.

[3] Assumes payments start the following year.

The revenue requirement is projected to increase to \$7.07 million in fiscal year 2016-17, and increase each year thereafter. The revenue requirement is projected to continue to increase fiscal years ending 2018 through 2022 to account for inflation, fund capital expenditures, and account for new debt. To keep rates at a 3% annual increase during this timeframe,

approximately \$2.3 million of existing cash reserves will be depleted. Note that the revenue requirement is the amount that must be collected from potable water customers; it excludes revenues from water sales to City TID customers. The percentage increases in revenue requirement match the 2012 Water Master Plan for the first three fiscal years.

4.2 TALENT IRRIGATION DISTRICT NON-POTABLE IRRIGATION SERVICE

Total annual costs of the water system to potable users is reduced by credits, including credit for water sales to TID non-potable water customers. In fiscal year 2015-16 TID charges are budgeted at \$81,000. This Study calculates the costs of the TID system at \$52,870 for fiscal year 2015-16. **Table A-10** shows annual costs comprise city canal maintenance costs as well as staffing and materials costs. **Table A-11** provides a supporting cost estimate for annual maintenance costs.

TID irrigation water is supplied under a 1924, 1926 and 1935 contract between the City and TID. This contract allows for use of 769 acre-feet for both non-potable irrigation and treated domestic water supplies. Use of TID deliveries by year since 2004 is shown in **Table A-12**. During drought years the contract may be reduced as it was in 2013 and 2014. The City also has a contract with TID for 600 acre-feet per year. The 600-acre feet contract is for potable water customers only.

The City diverts TID water to the Ashland Creek water treatment plant where it is treated and then enters the potable water distribution system. In drought years the City may also divert a portion or all the 769 acre-feet contract water to the treatment plant. Under this circumstance only the 'front side' canal users, located before the diversion to the treatment plant may receive water. As shown in **Table A-12**, on average, TID customers use 73% of the 769 acre-feet of water rights. This percentage is applied to the TID cost calculation for city canal maintenance costs. **Table 13** shows allocation of TID system costs between unmetered and metered non-potable water customers for fiscal year 2015-16.

Table 13
Calculated TID Use Rates for Fiscal Year 2015-16

Item	Calculation	Current Rates	Calculated 15/16 Rates
Total TID Annual Cost	a		\$52,870
Metered Rate per Cu. Ft.	b	\$0.0055	\$0.0022
SOU Annual Costs [1]	c = 7,101,690*b		\$15,348
Lithia Park (City) Annual Costs [1]	d = 1,020,495*b		\$2,205
Unmetered Irrigators Costs	e = a-c-d		\$35,316
Unmetered Irrigators Acres	e		174
Unmetered Annual Rate per Acre	f = d/e	\$170.01	\$202.97

Source: City of Ashland and HEC.

[1] Excludes service charge and meter replacement fee.

Cost share based on TID water use - see Table A-10:

Total Cubic Feet	24,463,405
SOU Cubic Feet	7,101,690
Lithia Park Cubic Feet	1,020,495
All Other Irrigators Cubic Feet	16,341,220

City of Ashland Ordinance 1288 provides for metered and unmetered TID irrigation water rates. The ordinance requires that rates shall be self-supporting so far as is practicable, so that domestic water users do not subsidize the cost of the TID irrigation water system; however, the ordinance also states that the primary use of the City's TID water is for domestic purposes in water-short years. In addition, TID non-potable water will be available for irrigation purposes at rates less than those in effect for domestic water.

The calculated rate for metered customers is less than the current rate. The rate for unmetered customers does not immediately increase to cost of service. It gradually increases over the next six years to cost of service.

	Current	7/1/2016	7/1/2017	7/1/2018	7/1/2019	7/1/2020	7/1/2021
Metered Rate per Cu. Ft.	\$0.0055	\$0.0022	\$0.0023	\$0.0024	\$0.0025	\$0.0026	\$0.0026
Unmetered Rate per Acre	\$170.01	\$183.11	\$196.20	\$209.30	\$222.40	\$235.50	\$248.59

Table 14 shows the calculated offset to the revenue requirement over the Study period.

Table 14
TID Revenue Offset

Costs	Assumption	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
TID Annual Cost Paid by Metered Customers								
Base Meter Charge [1]								
SOU		\$4,231	\$432	\$446	\$460	\$466	\$487	\$502
Lithia Park (City)		\$2,257	\$351	\$362	\$373	\$377	\$395	\$407
Metered Water Use [2]								
SOU		\$39,059	\$15,875	\$16,420	\$16,984	\$17,568	\$18,172	\$18,798
Lithia Park (City)		\$5,613	\$2,281	\$2,359	\$2,441	\$2,524	\$2,611	\$2,701
Total SOU		\$44,672	\$18,156	\$18,779	\$19,425	\$20,092	\$20,784	\$21,499
Total Lithia Park (City)		\$7,869	\$2,632	\$2,722	\$2,814	\$2,901	\$3,007	\$3,108
Total TID Metered Customers		\$52,541	\$20,788	\$21,501	\$22,238	\$22,993	\$23,790	\$24,608
All Other TID Users Costs								
Annual Flat Fees [3]		\$29,582	\$31,861	\$34,140	\$36,418	\$38,697	\$40,976	\$43,255
Total TID Unmetered Customers		\$29,582	\$31,861	\$34,140	\$36,418	\$38,697	\$40,976	\$43,255
Total Estimated TID Customer Payments								
Meter Fees		\$6,488	\$783	\$809	\$833	\$842	\$883	\$909
Use Fees		\$74,254	\$50,016	\$52,919	\$55,843	\$58,790	\$61,760	\$64,754
Total Fees		\$80,742	\$50,800	\$53,727	\$56,676	\$59,632	\$62,642	\$65,663
Contracted Water	2.0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0
City Maintenance Costs	3.0%	\$30,070	\$30,972	\$31,901	\$32,858	\$33,844	\$34,859	\$35,905
Canal Depreciation	constant	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TID Billing Costs (personnel)	4.0%	\$22,800	\$23,712	\$24,660	\$25,647	\$26,673	\$27,740	\$28,849
Total Annual Cost (rounded)		\$52,870	\$54,684	\$56,562	\$58,505	\$60,517	\$62,599	\$64,754
Annual Percentage Increase			3.4%	3.4%	3.4%	3.4%	3.4%	3.4%

Source: City of Ashland and HEC.

[1] Customer charges and meter replacement fees for one 6" meter (SOU) and one 4" meter (Lithia Park).

[2], [3] Calculated Rates from Table 12.

Calculated Rate per Metered Connection	\$0.0055	\$0.0022	\$0.0023	\$0.0024	\$0.0025	\$0.0026	\$0.0026
Calculated Rate per Acre at Cost of Service	\$170.01	\$209.93	\$217.14	\$224.60	\$232.32	\$240.32	\$248.59
Calculated Rate per Acre at Gradual Increase		\$183.11	\$196.20	\$209.30	\$222.40	\$235.50	\$248.59

4.3 METER REPLACEMENT PROGRAM

City crews replace older water meters that are near the end of their useful life, or which are inaccurately measuring water flow. The City has not been collecting funds to routinely replace meters. The cost to replace meters, by size of meter, was used to determine the annual cost of a meter replacement program (it is estimated that meters will have to be replaced every 20 years). Meter replacement program costs will increase as the number of City water meters increases and as the cost of installation increases. It is estimated that the meter replacement program will increase annually from approximately \$138,000 in 2015 to \$172,000 fiscal year ending 2022, as shown in **Table 15**.

Table 15
Estimated Meter Replacement Fee Program Costs

		Fiscal Year Ending						
Item	Assumption	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
Projected Growth in Water Meters				0.59%	0.59%	0.59%	0.59%	0.59%
Projected City Water Meters		8,819	8,871	8,923	8,976	9,029	9,082	9,136
Estimated Replacement Cost per Meter [1]	3.12%	\$312	\$322	\$332	\$342	\$353	\$364	\$376
Percentage of Meters Replaced	20-yr cycle	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Estimated Meter Replacement Program Cost		\$137,719	\$142,851	\$148,169	\$153,697	\$159,426	\$165,363	\$171,533

Source: City of Ashland and HEC.

[1] Weighted average cost of meters.

Assumptions for meter costs in 2015 are shown in **Table A-13**. Meter costs and fees are increased 3.12% per year per the historical 20-year average annual ENR CCI increase previously described. **Table 16** shows the calculated meter replacement fees. Since the revenues and costs of the meter replacement program are assumed to be equal each year, the program is not included in the revenue requirement calculation.

Table 16
Calculated Meter Replacement Fees

Meter Size	Effective July 1						
	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
<i>Annual escalator 3.12%</i>							
3/4"	\$1.15	\$1.18	\$1.22	\$1.26	\$1.30	\$1.34	\$1.38
1"	\$1.72	\$1.77	\$1.83	\$1.88	\$1.94	\$2.00	\$2.07
1-1/2"	\$2.71	\$2.79	\$2.88	\$2.97	\$3.06	\$3.16	\$3.26
2"	\$3.65	\$3.76	\$3.88	\$4.00	\$4.12	\$4.25	\$4.38
3"	\$7.81	\$8.06	\$8.31	\$8.57	\$8.83	\$9.11	\$9.39
4"	\$16.98	\$17.51	\$18.05	\$18.62	\$19.20	\$19.80	\$20.41
6"	\$23.54	\$24.28	\$25.03	\$25.81	\$26.62	\$27.45	\$28.30
8"	\$28.39	\$29.27	\$30.18	\$31.12	\$32.10	\$33.10	\$34.13

Source: HEC.

Section 5: COST OF SERVICE ANALYSIS

5.1 FUNCTIONAL COST ALLOCATION

City water system costs were classified into different functions: customer costs, meter and services costs, capacity costs, and commodity costs. Customer costs, meter and services costs, and a portion of capacity costs are fixed costs. Fixed costs generally consist of costs that a utility incurs to serve customers irrespective of the amount or rate of water they use.⁵ A portion of capacity costs and all commodity costs are variable costs. Variable costs are those that change in total as the volume of activity changes, as measured in a specific time period. These commonly include the costs of chemicals used in the treatment process, energy related to pumping for transmission and distribution, and purchased water.

Table A-14 shows how the expenses in the City's budget were allocated to the different functions of water service. Expense functions were allocated based on one of five different methodologies. These methodologies include:

1. **Plant In Service.** Plant in service allocation is shown in **Table A-15**. Plant in service costs include the original cost of current water system assets. Total cost is allocated to customers, meters and services, capacity, and commodity.
2. **Ratio of Average to Peak Month.** The calculation of peak to average month flows is shown in **Table 3**. Expenses are allocated 55% to customers and 45% to use functions using this methodology.
3. **Utilities.** All utilities costs (electricity) are allocated 100% to commodity because they are directly affected by the amount of water delivered. TAP water is also allocated 100% to commodity.
4. **Customers.** Central service costs and costs such as office supplies, telephones, computers, postage and insurance are allocated 100% to customer costs. These costs are not affected by the amount of water delivered.
5. **Average of Classified Costs.** Many expenses are allocated to multiple functions of water service because they do not directly relate to capacity of the water system, or quantity of water deliveries. These expenses are allocated among the customer, meters and services, capacity, and commodity functions based on the combined percentage allocation of all other classified costs. Examples of expenses allocated using this methodology include salaries and other personnel costs, professional services, and training costs.

Customer, meters and services, and a portion of capacity costs are captured in flat monthly fees. Commodity costs and a portion of capacity costs are captured through variable water service fees (use fees). Capacity costs were split between flat monthly fees and use fees to reflect that some capacity or infrastructure costs must be recovered regardless of the amount of water used.⁶

⁵ M1 Manual, pp. 137-138.

⁶ M1 Manual page 139, fixed charges.

The portion of capacity costs allocated to the flat monthly fees is referred to as a readiness to serve charge. The allocation of revenue requirement using the functional allocation is shown in **Table 17**.

Table 17
Allocation of Revenue Requirement to Cost Functions

Costs	Functional Allocation	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Total Revenue Requirement		\$6,543,230	\$7,067,244	\$7,384,483	\$7,638,716	\$7,903,258	\$8,171,870	\$8,456,844
Customer	18%	\$1,177,781	\$1,272,104	\$1,329,207	\$1,374,969	\$1,422,587	\$1,470,937	\$1,522,232
Meters & Services	5%	\$327,162	\$353,362	\$369,224	\$381,936	\$395,163	\$408,594	\$422,842
Capacity (in flat charge) [1]	19%	\$1,243,214	\$1,342,776	\$1,403,052	\$1,451,356	\$1,501,619	\$1,552,655	\$1,606,800
Capacity (in use charge)	31%	\$2,028,401	\$2,190,846	\$2,289,190	\$2,368,002	\$2,450,010	\$2,533,280	\$2,621,622
Commodity	27%	\$1,766,672	\$1,908,156	\$1,993,810	\$2,062,453	\$2,133,880	\$2,206,405	\$2,283,348
Total	100%	\$6,543,230	\$7,067,244	\$7,384,483	\$7,638,716	\$7,903,258	\$8,171,870	\$8,456,844

Source: HEC.

[1] The readiness to serve charge.

[2] In 2014 the City collected 45% of water charges in flat monthly charges; however, this was a drought year. During drought years the base charges comprise a larger portion of total revenues.

5.2 RATE DESIGN

Allocation of costs to customer categories is based on the Commodity-Demand method described in the M1 Manual Chapter III.2. Once the revenue requirement has been projected and the functional allocation analysis performed the City has to arrive at a rate design (how the revenue requirement will be collected) with knowledge of how the City's water system costs are structured. In determining an appropriate rate design for Ashland, this Study considered the following key objectives:

- Rates must be capable of generating sufficient revenues to meet all annual financial obligations of the water enterprise fund;
- The rate structure should encourage water efficiency;
- Change to the rate structure must be administratively feasible (compatible with the existing billing system and straightforward to explain to customers);
- The rate structure should be as representative of local customer water use patterns as possible; and
- Revised rates must be supportive of City goals, keeping within affordability guidelines.

With these objectives in mind, the differential in costs by pumping zone was analyzed. The analysis did not show any significant differences in costs by pumping zone; this potential change to the rate design was discarded.

Flat Monthly Costs. The customer, meters and services, and readiness to serve costs should all be collected in flat monthly fees. Options for collection include combining all costs into one service charge based on meter size (as is currently done) or separating customer costs from capacity costs and collecting customer costs based on the number of accounts, rather than meter size. While both approaches are common, this Study recommends a customer charge and a service charge because this methodology more accurately captures the costs of service. Central services costs, which make up the majority of customer costs, are a direct function of the number of water accounts served, not capacity of the system (meters).

This Study recommends implementation of monthly customer charges as shown in **Table 18**. If a water account has multiple meters associated with it, the account would only pay the customer charge once. In contrast, capacity costs are collected for each meter with the potential to use the capacity of the system.

Table 18
Calculation of Customer Service Costs per Account

Allocated To	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
<i>Projected Annual Growth Rate</i>		0.59%	0.59%	0.59%	0.59%	0.59%	0.59%
Revenue Requirement Allocated	\$1,177,781	\$1,272,104	\$1,329,207	\$1,374,969	\$1,422,587	\$1,470,937	\$1,522,232
Total City Water Accounts	8,980	9,033	9,087	9,140	9,194	9,249	9,303
Customer Cost per Bill per Year	\$131.16	\$140.83	\$146.28	\$150.43	\$154.72	\$159.04	\$163.62
Cost per Month	\$10.93	\$11.74	\$12.19	\$12.54	\$12.89	\$13.25	\$13.64

Source: City of Ashland and HEC.

Table 19 on the next page shows allocation of meters and services and the readiness to serve costs. The calculation is based on total number of billable meter equivalents and the meter ratios of meter sizes to a 3/4" meter. Meter ratios reflect the difference in water volume that can be taken through the meter. Calculation of equivalent meter ratios is shown in **Tables 20** and **A-16**.

In addition to the customer and service charges calculated from the revenue requirement projection and allocation, the new rate structure adds the meter replacement fee (see Section 4) to the service charge. The revised flat monthly charge now includes three components: the service charge, the customer charge, and the meter replacement fee.

Variable (Use) Costs. Remaining capacity costs and commodity costs are recovered from customers through use charges applied to actual water consumption as measured through

water meters. In 2014 the City collected 55% of costs through use charges.⁷ This Study calculates rates with 58% of costs collected in use charges so that use charges continue to send a water conservation signal to customers. There are many ways that the City could collect use charges. This Study selected a rate structure based on City goals and customer water use patterns.

Table 19
Calculation of Monthly Service Charge by Meter Size

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	Base	1	2	3	4	5	6
Allocated Costs [1]	\$1,570,375	\$1,696,139	\$1,772,276	\$1,833,292	\$1,896,782	\$1,961,249	\$2,029,642
Est. Billable Meter Equivalents	11,184	11,250	11,317	11,384	11,451	11,519	11,587

Meter Size	Meter Ratio	Monthly Service Charge per Meter						
3/4"	1.00	\$11.70	\$12.56	\$13.05	\$13.42	\$13.80	\$14.19	\$14.60
1"	1.00	\$11.70	\$12.56	\$13.05	\$13.42	\$13.80	\$14.19	\$14.60
1.5"	5.00	\$58.51	\$62.82	\$65.25	\$67.10	\$69.02	\$70.94	\$72.99
2"	8.00	\$93.61	\$100.51	\$104.41	\$107.36	\$110.43	\$113.51	\$116.78
3"	16.00	\$187.22	\$201.02	\$208.81	\$214.73	\$220.86	\$227.02	\$233.56
4"	25.00	\$292.53	\$314.10	\$326.27	\$335.51	\$345.09	\$354.72	\$364.94
6"	50.00	\$585.05	\$628.19	\$652.53	\$671.03	\$690.19	\$709.45	\$729.87
8"	80.00	\$936.08	\$1,005.11	\$1,044.05	\$1,073.65	\$1,104.30	\$1,135.12	\$1,167.80

Source: City of Ashland and HEC.

[1] Includes meter and services costs and portion of capacity costs that represent the readiness to serve.

Table 20
Estimated Meter Equivalent Units

Meter Size	Number of Meters	Ratio to 3/4" Service	Equivalent Meter Units
		[1]	
3/4"	7,814	1.0	7,814
1"	509	1.0	509
1.5"	167	5.0	835
2"	145	8.0	1,160
3"	21	16.0	336
4"	14	25.0	350
6"	2	50.0	100
8"	1	80.0	80
Total	8,673		11,184

Source: Table B-1 of the AWWA M1 Manual, City of Ashland, and HEC.

[1] Uses safe maximum operating capacities of C-700-09 Displacement Type Meters (bronze main case) for meters smaller than 2" and C-702-10 Compound Type, Class I for meters 2" and larger.

⁷ Percentage will fluctuate from year to year. Since 2014 was a drought year it is expected that use charges would normally comprise a larger share of total water rate revenues (between 55% and 60%).

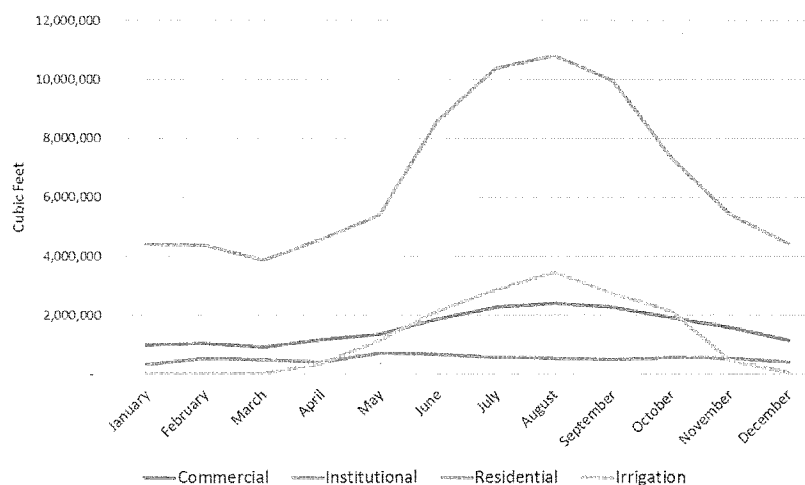
This Study proposes to keep the City's current increasing block rate structure for most customers for use charges. Properly designed increasing block rates recover class-specific costs of service while sending a more conservation-oriented price signal to that class.⁸ The M1 Manual page 116 also summarizes that "increasing block rate structure have found growing use in areas experiencing growth in water demand that is reaching the safe yield or capacity of the system, where there has been an impetus for improved efficiency in water use." Setting appropriate increasing blocks is determined by examining customer characteristics.

5.2.1. Customer Characteristics

Table 21 on the following page shows the customer characteristics of residential, non-residential, and irrigation customers. Average monthly use, monthly winter average and monthly summer average use as well as average annual use by customer type are calculated using 2014 meter reads. In the summer months all residential customers and commercial customers with meters 2" or less use approximately twice the amount of water that they do during the winter months. Larger commercial customers and institutional customers use about 1.5 times the amount of water during the summer months. The summer to average month ratio is close to one for institutional customers and the maximum month usage is in May, before the peak use for the water system as a whole. Institutional characteristics suggest one rate for all water use would be appropriate. Irrigation customers display very different usage to the other customer types. Only about 10% of irrigation customers take water throughout the year.

Figure 8 shows customer usage patterns by customer type throughout the year. The peaking patterns of residential and irrigation customers is pronounced compared with the other customer types. These customers also comprise 81% of total water use (see **Figure 4**) therefore a rate structure that encourages efficient use of water during the summer months is very important.

Figure 8
Monthly Water Use by Customer Type



⁸ M1 Manual page 111.

Table 21
Customer Usage Characteristics

Customer Type	Number of Billing		Median	Average	Maximum		Average	Monthly	Monthly	Monthly	Winter	Summer	Summer to
	Meters	Units	Monthly Use	Monthly Use	Average (non-coincident)	Month Use	Annual Use	Winter Average	Summer Average	Summer to Summer	Ratio		
cubic feet per month figures in cubic feet													
use per unit													
Residential								[1]	[2]				
Master Metered	606	3,300	296	374	548	August	4,487	265	525	2.0			1.4
Single Unit	6,993	6,993	505	772	1,296	August	9,265	460	1,201	2.6			1.6
Non-Residential													
Commercial < 2"	504		588	1,672	2,601	August	20,064	1,080	2,360	2.2			1.4
Commercial 2" or larger	51		5,310	11,224	15,989	August	134,691	9,094	14,918	1.6			1.3
Institutional	77		994	6,780	9,543	May	81,366	5,876	7,360	1.3			1.1
Irrigation [3]	325		1,657	6,442	10,652	September	77,301	647	8,808	13.6			1.4
Total	8,556	10,293											

Source: City of Ashland and HEC.

[1] December through March consumption.

[2] June through September consumption.

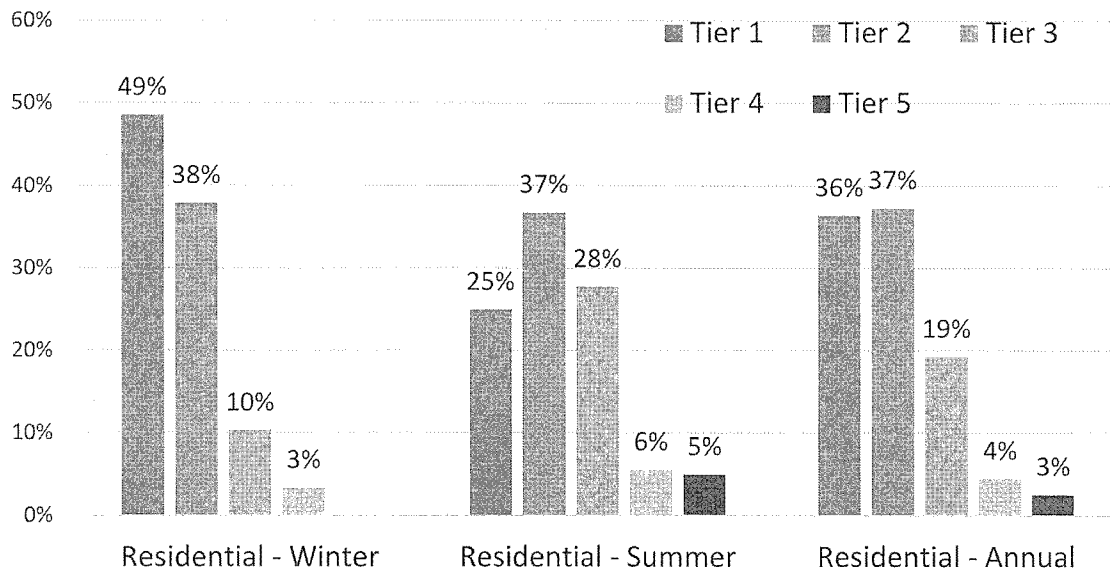
[3] Approximately 32 accounts (10%) use water year-round.

Use by customer type by month is further examined by water meter size in **Table A-17**. The table shows that use is driven by customer category and by meter size. Based on use characteristics by customer type the proposed rate structure includes five customer categories, designed to capture customer use patterns. The customer categories include residential, commercial 2" or smaller, commercial greater than 2", institutional, and irrigation.

Bill Tabulation. Bill tabulation is a tool used to analyze customer use data to determine appropriate rate blocks. Bill tabulations and analysis for residential customers are shown in **Tables A-18** through **A-20**. On an annual basis, residential customers take 36% of water in tier 1, 37% in tier 2, 19% in tier 3, 4% in tier 4 and 3% in tier 5 (summer months only). Residential use by tier is illustrated in **Figure 9**.

This Study recommends keeping the current tiers for residential customers. As is desired, the current rate structure is capturing the majority of water use in tiers 1, 2, and 3. Only excessive water users (the top 7% of water) are billed in tiers 4 and 5. Tier 5 only applies during the summer (June through September)⁹.

Figure 9
Residential Water Use by Tier



Non-residential bill tabulation under the current rate structure is shown in **Table A-21**. The table shows large discrepancies in water billed under tiers 1 and 2 among the different non-residential customer types (irrigation, commercial and institutional) as illustrated in **Figure 10**. This Study recommends only charging commercial customers two tiers. The proposed

⁹ Tier 1 is intended to capture typical customer monthly indoor water usage. Tier 2 is intended to capture typical customer monthly indoor usage and some outdoor water usage. Tier 3 is intended to apply to customers using more than the typical customer does in an average water use month.

two tiers result in the bill tabulation shown in **Table A-22**. As a result of changing the commercial tiers according to meter size (less than 2" and 2" and larger), 60-65% of water is billed in tier 1, providing consistency among different commercial users. This is shown in **Figure 11**. The current rate structure and proposed rate structure are compared in **Tables A-23** and **A-24**.

Figure 10
Non-Residential Water Use by Tier (current rate structure)

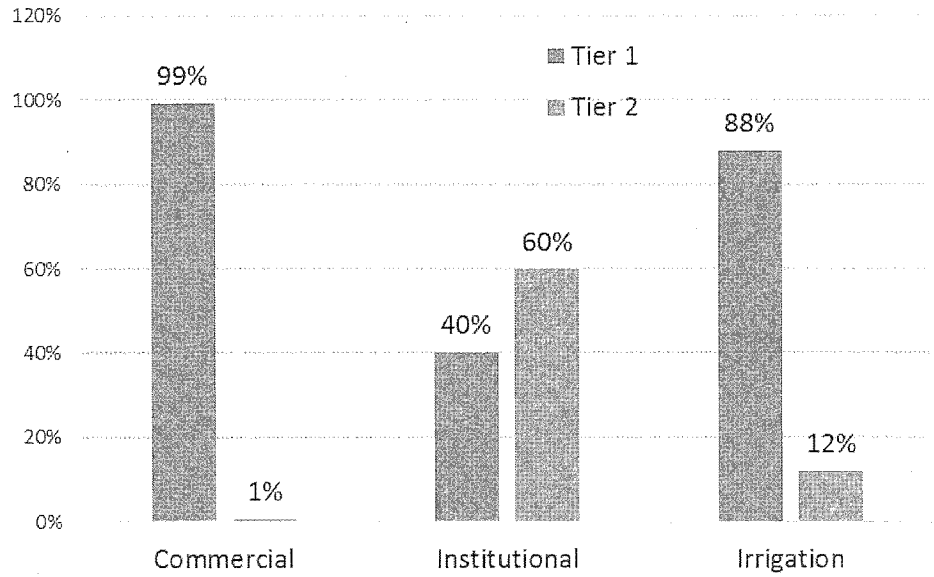
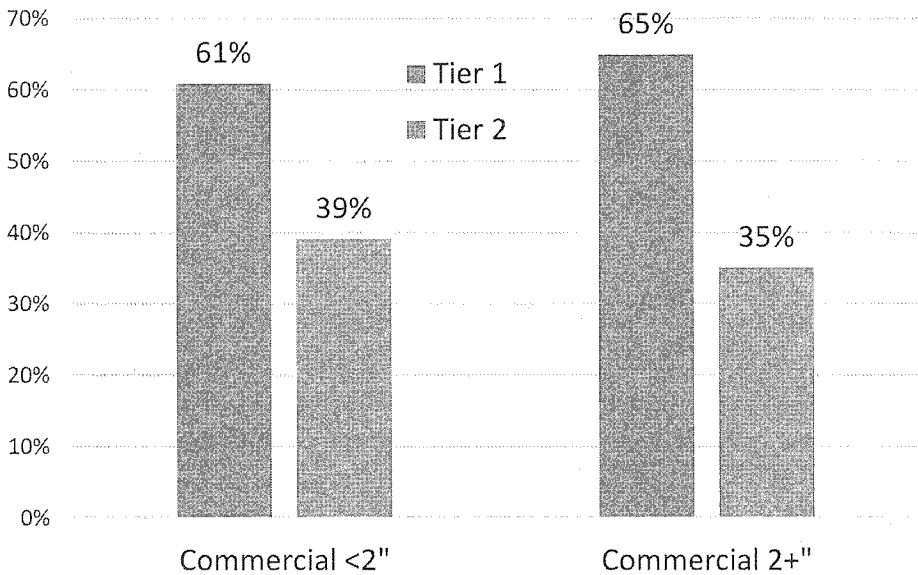


Figure 11
Commercial Water Use by Tier (proposed rate structure)



5.3 POTABLE WATER DEMAND PROJECTION

Historical potable water use by customer type is shown in **Table A-25**. Projected potable water demand is shown in **Table 22**. Total number of water users by customer category is projected using an average annual growth rate of 0.59%. The growth rate is based on the average of the State certified population estimates historical growth rate and the City's Comprehensive Plan estimated growth rate. Projected water demand is based on average annual use by customer category for calendar year 2014.

Table 22
Projected Potable Water Demand

Potable Water Customer	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
Residential	Figures in Cubic Feet						
Single Family	62,048,584	62,463,798	62,760,506	63,092,739	63,426,063	63,763,271	64,099,340
Multi-Family	20,299,186	20,443,836	20,544,128	20,654,585	20,765,447	20,877,506	20,989,338
Subtotal Residential	82,347,770	82,907,634	83,304,634	83,747,324	84,191,510	84,640,777	85,088,678
Non-Residential							
Commercial <2" meter	10,276,017	10,477,157	10,522,645	10,576,058	10,629,590	10,683,875	10,737,773
Commercial 2"+ meter	7,446,478	7,592,234	7,625,196	7,663,901	7,702,694	7,742,031	7,781,088
Institutional	6,197,355	6,282,192	6,314,230	6,348,832	6,383,577	6,418,661	6,453,731
Irrigation	14,792,917	14,121,921	14,133,872	14,179,296	14,224,212	14,271,344	14,315,774
Subtotal Non-Residential	38,712,767	38,473,504	38,595,943	38,768,087	38,940,073	39,115,911	39,288,367
Total Billable	121,060,537	121,381,138	121,900,577	122,515,411	123,131,582	123,756,688	124,377,045
Tracking Water	1,254,006	1,261,422	1,268,881	1,276,385	1,283,932	1,291,525	1,299,162
Unaccounted Water	5,504,154	5,518,915	5,542,626	5,570,631	5,598,698	5,627,170	5,655,429
Estimated Water Produced	127,818,697	128,161,475	128,712,083	129,362,426	130,014,213	130,675,383	131,331,636

Source: City of Ashland and HEC.

Tables A-26 and **A-27** show the water demand calculations. Projected water demand accounts for decreased use of water due to reaction to increased water prices. This effect is called 'price elasticity.' Price elasticity measures the change in water use resulting from a price increase, all other things held equal. Price elasticity factors vary by location, pricing structure of both water and sewer rates, time of year, and customer type. Price elasticity is only applied to real price increases; that is the price increase adjusted for inflation, to keep the effect of the price of water independent of total cost increases. For example, if the price increase necessary to meet the revenue requirement is 10.0% and inflation is 2.0%, any change in water demand as a result of a price increase is calculated on an 8.0% increase. With a negative price elasticity of 0.1, a single family residential customer is expected to decrease water use by 1.0% when price increases 10.0%. Irrigation customers are anticipated to react the most to water price increases.

Table A-28 compares the water demand projection in the Study to water demand projections in the 2012 Water Master Plan. It also shows derivation of the average annual growth rate used in the Study. This cost of service water rate study projects lower demands than the 2012 Water Master Plan; however, this is considered reasonable for purposes of the Study. As described in Section 1 of the Study, the purpose of the Water Master Plan is to plan for maximum future use whereas the purpose of the Study is to plan for minimum future use.

5.4 CALCULATED RATES

The flat monthly charges were calculated in Section 5.2. Use charges are calculated based on the proposed new customer categories, rate structure (tiers), estimated water use by tier, and total projected water demand (Section 5.3).

Total costs allocated to use charges equals capacity costs allocated to use charges and commodity costs. The allocation of these costs by customer type is shown in **Table A-29**. A support table to the allocation of commodity costs is shown in **Table A-30**.

Table 23 on the next page shows the calculation of usage charges. The cost ratios between residential tier 1 and tier 2 is 0.80. Between tier 2 and tier 3 the ratio is 1.35, between tier 3 and tier 4 it is 1.75 and between tier 4 and tier 5 it is 2.25. As an example, tier 3 water is 35% more expensive than tier 2 water.

Commercial customers would be charged at the residential tier 2 and tier 3 rates.

On-peak and off-peak (seasonal) potable irrigation rates were calculated for commercial and institutional irrigation customers based on historical usage as shown in **Table A-31**. On-peak rates would be charged June through September.

Institutional customers would be charged one rate for all consumption.

Calculated water rates through the Study period are shown in **Table 24** on page 40. Monthly service charges include the meter replacement fee.

Table 23
Calculated Use Charges per Cubic Foot

Item		2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
		Base	1	2	3	4	5	6
Allocated Cost		\$3,795,073	\$4,099,001	\$4,283,000	\$4,430,455	\$4,583,890	\$4,739,685	\$4,904,969
Total Consumption		121,060,537	121,381,138	121,900,577	122,515,411	123,131,582	123,756,688	124,377,045
Cost per Cubic Foot [1]		\$0.0313	\$0.0338	\$0.0351	\$0.0362	\$0.0372	\$0.0383	\$0.0394
Institutional Costs								
Insitutional Cost		\$170,913	\$184,600	\$192,887	\$199,528	\$206,438	\$213,454	\$220,898
Insitutional Use		6,197,355	6,282,192	6,314,230	6,348,832	6,383,577	6,418,661	6,453,731
Institutional Cost per Cu. Ft.		\$0.0276	\$0.0294	\$0.0305	\$0.0314	\$0.0323	\$0.0333	\$0.0342
Residential & Commercial Costs								
Residential Cost		\$2,613,129	\$2,822,401	\$2,949,094	\$3,050,626	\$3,156,275	\$3,263,548	\$3,377,356
Commercial Cost		\$466,606	\$503,975	\$526,597	\$544,727	\$563,592	\$582,747	\$603,069
Total Resid. & Comm'l Costs		\$3,079,735	\$3,326,375	\$3,475,692	\$3,595,353	\$3,719,866	\$3,846,295	\$3,980,425
Estimated Usage by Customer Group by Tier								
Tier 1 (Residential)		29,979,403	30,183,226	30,327,758	30,488,923	30,650,632	30,814,192	30,977,254
Tier 2 (Residential & Comm'l)		41,828,362	42,254,443	42,451,723	42,674,612	42,898,188	43,124,473	43,349,830
Tier 3 (Residential & Comm'l)		22,486,770	22,724,357	22,830,151	22,949,856	23,069,927	23,191,461	23,312,483
Tier 4 (Residential)		3,675,585	3,700,574	3,718,294	3,738,054	3,757,880	3,777,933	3,797,925
Tier 5 (Residential June - Sept only)		2,100,145	2,114,423	2,124,548	2,135,838	2,147,167	2,158,624	2,170,047
Total Use Residential & Comm'l		100,070,265	100,977,025	101,452,474	101,987,283	102,523,794	103,066,683	103,607,539
Resid. & Comm'l Cost per Cu. Ft.	Ratio							
Tier 1 (Residential)	0.80	\$0.0230	\$0.0246	\$0.0256	\$0.0263	\$0.0271	\$0.0278	\$0.0287
Tier 2 (Residential & Comm'l)	1.00	\$0.0287	\$0.0307	\$0.0319	\$0.0329	\$0.0338	\$0.0348	\$0.0358
Tier 3 (Residential & Comm'l)	1.35	\$0.0387	\$0.0415	\$0.0431	\$0.0444	\$0.0457	\$0.0470	\$0.0484
Tier 4 (Residential)	1.75	\$0.0502	\$0.0537	\$0.0559	\$0.0575	\$0.0592	\$0.0609	\$0.0627
Tier 5 (Residential June - Sept only)	2.25	\$0.0646	\$0.0691	\$0.0719	\$0.0739	\$0.0761	\$0.0783	\$0.0806
Irrigation Costs [2]								
Irrigation Cost		\$544,426	\$588,026	\$614,422	\$635,575	\$657,586	\$679,936	\$703,647
Irrigation Off-Peak Use	27%	4,050,831	3,867,088	3,870,361	3,882,799	3,895,099	3,908,006	3,920,172
Irrigation Summer (Peak) Use	73%	10,742,086	10,254,833	10,263,511	10,296,496	10,329,113	10,363,339	10,395,602
Off-Peak Cost per Cu. Ft.		\$0.0292	\$0.0331	\$0.0345	\$0.0356	\$0.0367	\$0.0378	\$0.0390
On-Peak Cost per Cu. Ft.		\$0.0397	\$0.0449	\$0.0469	\$0.0483	\$0.0498	\$0.0513	\$0.0530

Source: HEC.

[1] Bulk water rate is the average cost of water collected in use charge for all customer types.

[2] Commercial and Institutional Irrigation services.

Table 24
Summary of Calculated Water Rates

Charges	Current	Rates Effective on July 1 Bills					
		2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Monthly Charges (\$ per Bill)							
Customer Charge	\$0.00	\$11.74	\$12.19	\$12.54	\$12.89	\$13.25	\$13.64
Service Charge			Monthly Charges (\$ per Meter Size)				
3/4" and Fire Guards	\$23.50	\$13.75	\$14.27	\$14.68	\$15.10	\$15.52	\$15.98
1"	\$46.99	\$14.34	\$14.88	\$15.31	\$15.75	\$16.19	\$16.66
1.5"	\$66.99	\$65.61	\$68.13	\$70.07	\$72.08	\$74.10	\$76.24
2"	\$88.24	\$104.27	\$108.28	\$111.36	\$114.55	\$117.76	\$121.16
3"	\$184.50	\$209.08	\$217.12	\$223.30	\$229.69	\$236.13	\$242.95
4"	\$282.07	\$331.60	\$344.32	\$354.13	\$364.29	\$374.52	\$385.35
6"	\$528.92	\$652.47	\$677.56	\$696.84	\$716.81	\$736.90	\$758.18
8"	\$881.49	\$1,034.38	\$1,074.23	\$1,104.77	\$1,136.39	\$1,168.21	\$1,201.93
Potable Water Use Charges			\$ per cubic foot				
Bulk Water	[1]	\$0.0338	\$0.0351	\$0.0362	\$0.0372	\$0.0383	\$0.0394
Institutional Water	[1]	\$0.0294	\$0.0305	\$0.0314	\$0.0323	\$0.0333	\$0.0342
Residential	[2]						
Tier 1	\$0.0243	\$0.0246	\$0.0256	\$0.0263	\$0.0271	\$0.0278	\$0.0287
Tier 2	\$0.0299	\$0.0307	\$0.0319	\$0.0329	\$0.0338	\$0.0348	\$0.0358
Tier 3	\$0.0400	\$0.0415	\$0.0431	\$0.0444	\$0.0457	\$0.0470	\$0.0484
Tier 4	\$0.0517	\$0.0537	\$0.0559	\$0.0575	\$0.0592	\$0.0609	\$0.0627
Tier 5 (Jun-Sep only)	\$0.0673	\$0.0691	\$0.0719	\$0.0739	\$0.0761	\$0.0783	\$0.0806
Commercial	[3]						
Tier 1	\$0.0343	\$0.0307	\$0.0319	\$0.0329	\$0.0338	\$0.0348	\$0.0358
Tier 2	\$0.0353	\$0.0415	\$0.0431	\$0.0444	\$0.0457	\$0.0470	\$0.0484
Irrigation [4]							
Off-Peak (Oct - May)	[1]	\$0.0331	\$0.0345	\$0.0356	\$0.0367	\$0.0378	\$0.0390
On-Peak (Jun - Sep)	[1]	\$0.0449	\$0.0469	\$0.0483	\$0.0498	\$0.0513	\$0.0530

Source: HEC.

[1] Currently charged the same as commercial customers.

[2] Tiers do not change under new rate structure. They are: Tier 1 - up to 300 cf, Tier 2 - 301-1,000 cf, Tier 3 - 1,001-2,500 cf, Tier 4 - 2,501-3,600 cf, Tier 5 - greater than 3,600 cf. Residential irrigation services currently charged the same as residential domestic services. Under the new rate structure irrigation use would be combined with domestic use.

[3] Commercial current tiers are <50,000 cf and >50,000 cf. New tiers are <2,500 cf and >2,500 cf for commercial customers with meters <2" and <15,000 and >15,000 for larger meters.

[4] Seasonal rates for commercial and institutional irrigation meters.

5.4.1. Cost of Service Redistribution of Costs

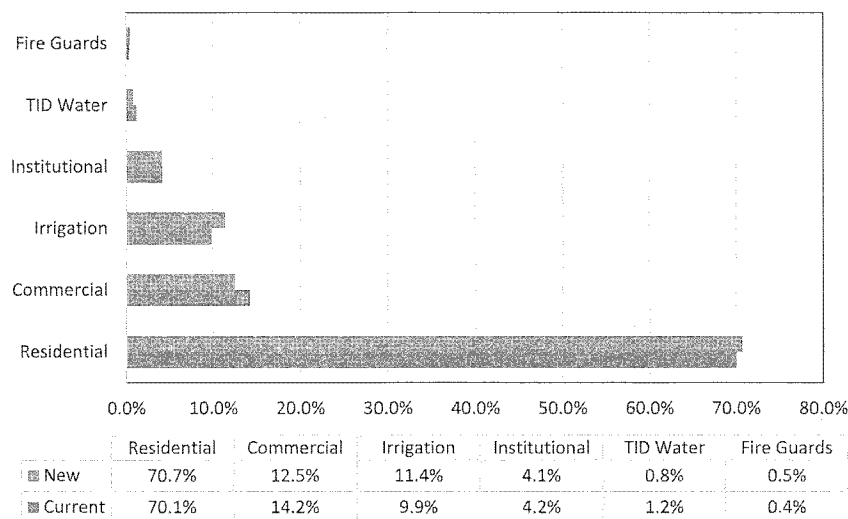
The cost of service analysis shows that currently there is subsidization of rates among customer classes. **Table 25** shows the reallocation of costs as a result of the cost of service analysis. Cost reallocation is also illustrated in **Figure 12**. Detailed calculations of revenues under the new rate structure are provided in **Table A-32**.

Table 25
Cost Allocation by Customer Type

Customer Type	Current (per Budget)		New (see Table A-32)		Cost Redistribution	
	Total	Share of Total	Total	Share of Total	As % of Current Cost	Total Difference
POTABLE						
Residential	\$4,621,000	70%	\$4,663,111	71%	1%	\$42,111
Non-Residential						
Commercial	\$938,800	14%	\$825,265	13%	-12%	(\$113,535)
Institutional	\$278,900	4%	\$273,548	4%	-2%	(\$5,352)
Fire Guards	\$25,500	0%	\$31,774	0%	25%	\$6,274
Irrigation	\$649,777	10%	\$749,532	11%	15%	\$99,755
Subtotal Potable	\$6,513,977	99%	\$6,543,230	99%	0%	\$29,253
NON-POTABLE (TID)						
Metered	\$52,541	1%	\$17,554	0%	-67%	(\$34,988)
Unmetered	\$29,582	0%	\$35,316	1%	19%	\$5,735
Subtotal Non-Potable	\$82,123	1%	\$52,870	1%	-36%	(\$29,253)
Total FY 2015-16	\$6,596,100	100%	\$6,596,100	100%	0%	\$0

Source: City of Ashland and HEC.

Figure 12
Redistribution of Costs to Customer Types



5.5 PROJECTED CASH FLOW AND FUND BALANCE

Table 26 projects cash flow through fiscal year 2021-22 for the operating fund. With adoption of the calculated rates it is anticipated that the City will be able to meet all water enterprise fund obligations, including existing and potential debt service coverage requirements, and achieve a targeted reserve of 20% of annual revenues in every year.

Table 26
Projected Operating Fund Cash Flow

Revenues and Expenses	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
	<i>New Rates Effective</i>	<i>7/1/2016</i>	<i>7/1/2017</i>	<i>7/1/2018</i>	<i>7/1/2019</i>	<i>7/1/2020</i>	<i>7/1/2021</i>
Revenue							
Municipal Water Sales	\$6,521,112	\$7,067,244	\$7,384,483	\$7,638,716	\$7,903,258	\$8,171,870	\$8,456,844
TID Water Sales	\$80,742	\$50,800	\$53,727	\$56,676	\$59,632	\$62,642	\$65,663
Other Revenue Sources	\$161,200	\$163,736	\$166,323	\$168,961	\$171,652	\$174,397	\$177,197
Total Revenues	\$6,763,054	\$7,281,780	\$7,604,533	\$7,864,353	\$8,134,543	\$8,408,910	\$8,699,704
Operating Expenses	\$5,002,770	\$5,109,906	\$5,281,831	\$5,459,577	\$5,643,347	\$5,833,351	\$6,029,809
Net Revenue before Debt Service and System Rehabilitation	\$1,760,284	\$2,171,874	\$2,322,701	\$2,404,776	\$2,491,196	\$2,575,559	\$2,669,895
Debt Service	\$617,059	\$857,445	\$1,272,981	\$1,490,164	\$2,057,259	\$2,050,359	\$2,048,409
<i>Debt Service Coverage [1]</i>	<i>2.85</i>	<i>2.53</i>	<i>1.82</i>	<i>1.61</i>	<i>1.21</i>	<i>1.26</i>	<i>1.30</i>
System Rehabilitation	\$0	\$1,004,428	\$1,154,721	\$1,159,613	\$1,168,937	\$1,175,200	\$1,176,486
Additional Cash for CIP Projects	\$402,240	\$1,933,647	\$32,079	\$0	\$0	\$0	\$0
Net Revenue	\$740,985	(\$1,623,647)	(\$137,079)	(\$245,000)	(\$735,000)	(\$650,000)	(\$555,000)
Beginning Balance [2]	\$3,264,915	\$4,005,900	\$2,382,253	\$2,245,174	\$2,877,387	\$2,764,848	\$2,820,848
Net Revenue	\$740,985	(\$1,623,647)	(\$137,079)	(\$245,000)	(\$735,000)	(\$650,000)	(\$555,000)
Transfer In (Out)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Add Back Rehabilitation Net of CIP	\$0	\$0	\$0	\$877,213	\$622,462	\$706,000	\$841,486
Ending Balance	\$4,005,900	\$2,382,253	\$2,245,174	\$2,877,387	\$2,764,848	\$2,820,848	\$3,107,335
Target Balance [3]	\$1,352,611	\$1,456,356	\$1,520,907	\$1,572,871	\$1,626,909	\$1,681,782	\$1,739,941

Source: City of Ashland and HEC.

[1] Minimum requirement of 1.20 assumed.

[2] Beginning balance as of July 1, 2015.

[3] 20% of operating revenues.

Projected water fund balances are shown in **Table 27**. This table includes the capital fund which is funded with SDC revenues.

Figure 13 illustrates the historical and projected water fund balance. The water fund balance is projected to decrease from \$5.00 million to \$4.16 million in fiscal year 2021-22.

Figure 13
Water Fund Balance

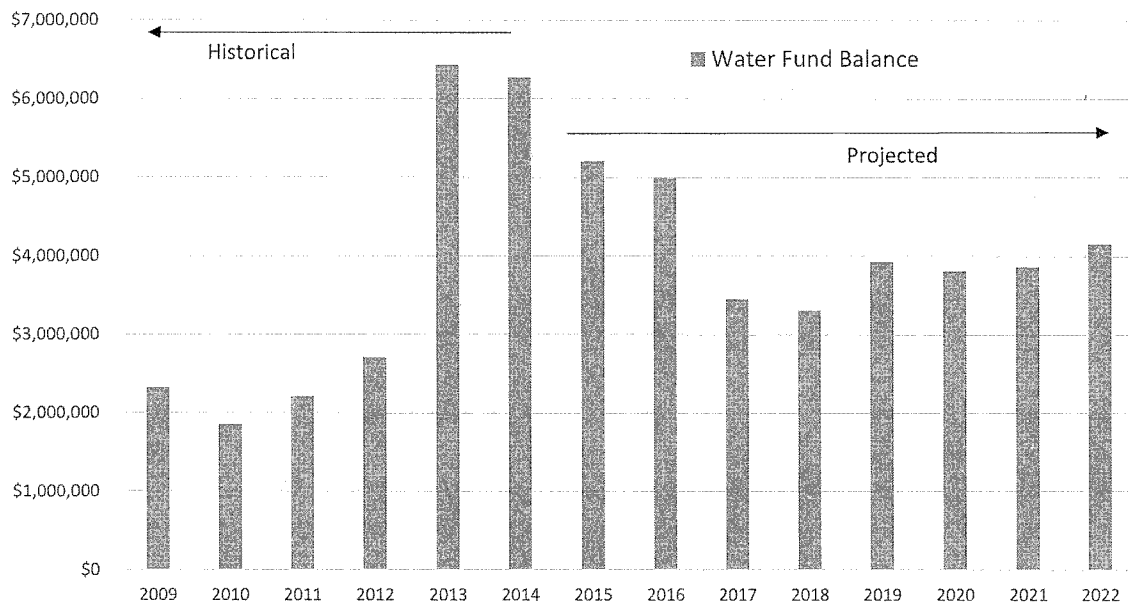


Table 27
Projected Water Fund Balance

Projected Cash Balances	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
Operating							
Beginning Balance	\$775,215	\$1,516,200	\$1,826,200	\$1,721,200	\$1,476,200	\$741,200	\$591,200
Revenues	\$6,763,054	\$7,281,780	\$7,604,533	\$7,864,353	\$8,134,543	\$8,408,910	\$8,699,704
Expenses	(\$6,022,069)	(\$8,905,427)	(\$7,741,612)	(\$8,109,353)	(\$8,869,543)	(\$9,058,910)	(\$9,254,704)
TAP Contingency	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer In (Out)	\$0	\$1,933,647	\$32,079	\$0	\$0	\$500,000	\$500,000
Ending Operating Balance	\$1,516,200	\$1,826,200	\$1,721,200	\$1,476,200	\$741,200	\$591,200	\$536,200
System Rehabilitation							
Beginning Balance	\$2,489,700	\$2,489,700	\$556,053	\$523,974	\$1,401,187	\$2,023,649	\$2,229,649
System Rehabilitation Revenue	\$0	\$1,004,428	\$1,154,721	\$1,159,613	\$1,168,937	\$1,175,200	\$1,176,486
Revenue used for CIP Projects	\$0	(\$1,004,428)	(\$1,154,721)	(\$282,400)	(\$546,475)	(\$469,200)	(\$335,000)
Transfer In (Out)	\$0	(\$1,933,647)	(\$32,079)	\$0	\$0	(\$500,000)	(\$500,000)
Ending Rehabilitation Balance	\$2,489,700	\$556,053	\$523,974	\$1,401,187	\$2,023,649	\$2,229,649	\$2,571,135
Total Operating Balance	\$4,005,900	\$2,382,253	\$2,245,174	\$2,877,387	\$2,764,848	\$2,820,848	\$3,107,335
Capital							
Beginning Balance	\$1,943,676	\$991,716	\$1,070,716	\$1,061,716	\$1,052,716	\$1,048,716	\$1,044,716
Add SDC Revenue [1]	\$100,000	\$250,000	\$260,000	\$260,000	\$270,000	\$270,000	\$280,000
Future Customers CIP PAYG	(\$1,051,960)	\$0	\$0	\$0	\$0	\$0	\$0
Debt Service	\$0	(\$171,000)	(\$269,000)	(\$269,000)	(\$274,000)	(\$274,000)	(\$274,000)
Transfer In (Out)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ending Capital Balance	\$991,716	\$1,070,716	\$1,061,716	\$1,052,716	\$1,048,716	\$1,044,716	\$1,050,716
Water Fund Balance	\$4,997,616	\$3,452,969	\$3,306,890	\$3,930,103	\$3,813,564	\$3,865,564	\$4,158,051

Source: HEC.

[1] Assumes addition of 50 EDUs per year and annual increase of SDCs of 2%.

Section 6: IMPACTS OF NEW RATE STRUCTURE

6.1 BILL IMPACTS

Bill impact analysis is used to demonstrate the new rate structure and the redistribution of costs among customer types in **Tables A-33 through A-41** for the first year of rate increase, fiscal year 2016-17. The tables demonstrate that the new rate structure has the desired outcome on each customer group.

Residential. Residential water bills would experience a small increase under the new rate structure due to the increase in revenue requirements and the reallocation of costs under the cost of service analysis (see **Table A-33**).

Commercial. Many commercial water bills would decrease under the new rate structure. The reduction in bills is also due to the reallocation of costs under the cost of service analysis. Larger meter sizes would be billed a greater portion of their total bill in flat monthly charges and would experience a total bill increase. Bill impacts are shown in **Tables A-34 through A-37**.

Institutional. Institutional water bills would experience a slight increase in the winter months and a decrease in the summer months. Since institutional customers have a relatively flat demand throughout the year, with a slight peak in the spring months before the irrigation season begins, this is appropriate. Institutional bills for 2" and 4" customers are shown in **Tables A-38 and A-39**.

Potable Irrigation. During peak summer months potable irrigation bills would increase. The rate design is intended to curb potable irrigation water use during the peak use months. During off-peak months water bills would increase if no water was taken. This reflects billing the flat monthly charges regardless of whether water is used or not. For accounts using water, irrigation bills would decrease. The off-peak potable irrigation water rate encourages planting in summer and fall months when water supply is not a concern. Irrigation bill impacts are shown in **Tables A-40 and A-41**.

6.2 AFFORDABILITY TEST

Under the calculated water rates for July 1, 2016, a $\frac{3}{4}$ " meter single family home using 1,000 cubic feet in a month would pay \$54.35, which is 1.5% of the estimated median household income for Ashland. The proposed water rates are affordable under EPA guidelines. These calculations are shown in **Table 28**.

Table 28
Affordability Test

Item	Annual		
	Annual	Increase	Monthly
Ashland Median Household Income [1]	\$43,500		
2015-16 Water Rates 3/4" using 1,000 cu. ft./mo	\$621		\$51.72
Current Water Rates as % of Ashland MHI	1.4%		
2016-17 Water Rates 3/4" using 1,000 cu. ft./mo	\$652		\$54.35
Proposed Water Rates % of Ashland MHI	1.5%		
Water Rates @ 2.0% of MHI [2]	\$870	\$870	\$72.50
Water Rates @ 2.5% of MHI [2]	\$1,088	\$1,087	\$90.63

Source: US Census.

[1] 2014 5-year American Community Survey estimate.

[2] Per EPA guidelines a water rate greater than 2% is high and a water rate higher than 2.5% is burdensome.

6.3 COMPARISON OF WATER RATES

Figure 14 illustrates what a household with a ¾" meter using 1,000 cubic feet in a month would pay for water in Ashland and several comparison communities as of August 1, 2015. Ashland's water rates are currently at the high end of the range and will remain at the high end of the range with the proposed rate increases.

Figure 14
Comparison of Single Family Monthly Water Bill

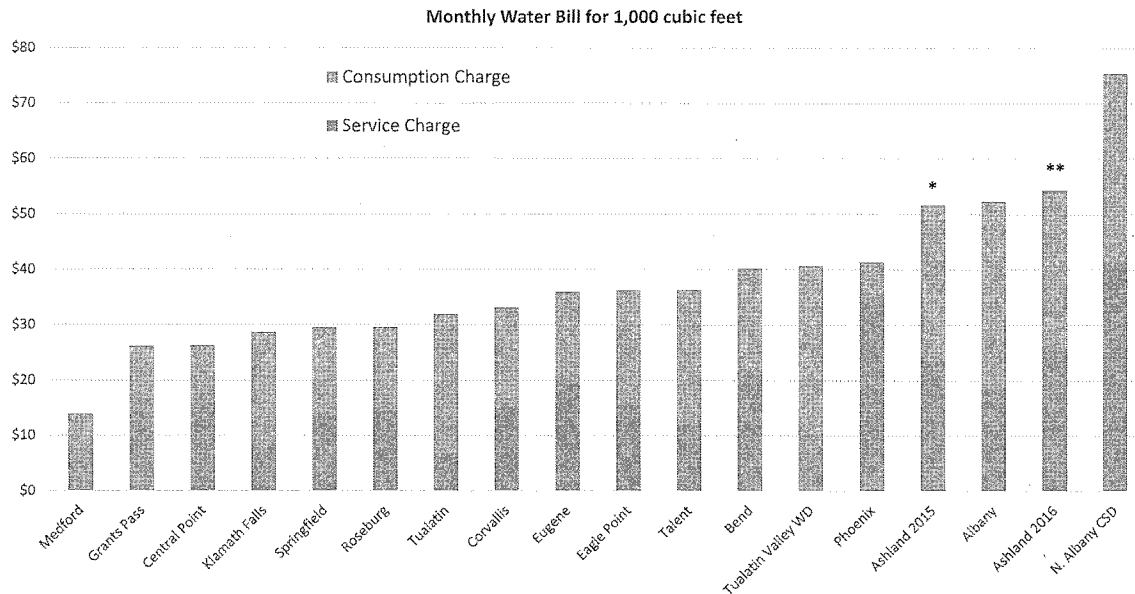


Table 29 compares fiscal year 2015-16 water bills for a typical single family home using 1,000 cubic feet under the current and new rate structures, and projects the calculated water bill through fiscal year ending 2022. Per EPA guidelines¹⁰, water rates would be considered affordable through fiscal year 2021-22.

Table 29
Calculated Typical Home Bill for 1,000 Cubic Feet

Residential Charges	Fiscal Year Ending						
	2016 current	2017 1	2018 2	2019 3	2020 4	2021 5	2022 6
Flat Charges							
Customer Charge		\$11.74	\$12.19	\$12.54	\$12.89	\$13.25	\$13.64
Service Charge	\$23.50	\$13.75	\$14.27	\$14.68	\$15.10	\$15.52	\$15.98
Total Flat Charges	\$23.50	\$25.48	\$26.46	\$27.21	\$27.99	\$28.78	\$29.61
Use Charges							
Tier 1 per cu. ft.	\$0.0243	\$0.0246	\$0.0256	\$0.0263	\$0.0271	\$0.0278	\$0.0287
Tier 2 per cu. ft.	\$0.0299	\$0.0307	\$0.0319	\$0.0329	\$0.0338	\$0.0348	\$0.0358
Tier 1 Charges (300 cu ft)	\$7.29	\$7.37	\$7.67	\$7.89	\$8.12	\$8.35	\$8.60
Tier 2 Charges (700 cu ft)	\$20.93	\$21.50	\$22.36	\$23.01	\$23.68	\$24.35	\$25.07
Total Use Charges	\$28.22	\$28.87	\$30.02	\$30.89	\$31.80	\$32.70	\$33.67
Bill for 3/4" using 1,000 cu. ft.	\$51.72	\$54.35	\$56.48	\$58.11	\$59.79	\$61.48	\$63.28
Percentage Increase		5%	4%	3%	3%	3%	3%

Source: HEC.

¹⁰ "Affordability Assessment Tool for Federal Water Mandates", prepared for the United States Conference of Mayors, The American Water Works Association, and the water Environment Federation by Stratus Consulting, Boulder, Colorado, 2013.

APPENDIX A

RATE STUDY SUPPORT TABLES

Table A-1
City of Ashland Water Rate Study
Historical and Budgeted Water Fund Revenues

REVENUES	Fiscal Year						
	2009-10 actual	2010-11 actual	2011-12 actual	2012-13 actual	2013-14 actual	2014-15 actual	2015-16 budget
Charges for Service							
Water Sales							
Commercial	\$580,812	\$603,874	\$679,370	\$762,567	\$816,152	\$892,585	\$938,800
Fire Guard	\$14,880	\$17,342	\$18,434	\$24,025	\$29,845	\$31,423	\$25,500
Government & Municipal	\$174,795	\$185,897	\$201,809	\$242,995	\$266,409	\$272,797	\$278,900
Multi-Family Residential	\$479,996	\$500,079	\$562,916	\$643,854	\$671,343	\$715,405	\$777,900
Single Family Residential	\$2,439,336	\$2,504,647	\$2,781,220	\$3,208,071	\$3,473,458	\$3,537,845	\$3,843,100
Irrigation (incl. TID customers)	\$444,284	\$419,039	\$528,824	\$609,199	\$581,370	\$624,453	\$731,900
Subtotal Water Sales	\$4,134,103	\$4,230,879	\$4,772,573	\$5,490,711	\$5,838,578	\$6,074,507	\$6,596,100
System Development Charges	\$151,864	\$180,604	\$491,612	\$266,196	\$269,029	\$328,414	\$100,000
Connection Fees	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Temporary Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0
New Service Installation	\$12,627	\$18,086	\$83,058	\$29,262	\$35,746	\$50,837	\$114,800
Miscellaneous	\$0	\$1,290	\$35,601	\$27,587	\$39,308	\$38,580	\$12,000
Subtotal Charges for Service	\$164,491	\$199,980	\$610,272	\$323,046	\$344,084	\$417,831	\$226,800
Other Revenues							
1982 Water Bonds	\$46	\$21	\$24	\$18	\$24	\$14	\$0
1992 Water Bonds	\$54	\$24	\$28	\$21	\$28	\$15	\$0
Intergovernmental Revenue	\$99,928	\$344,396	\$336,811	\$1,969,979	\$89,747	\$70,473	\$14,000
Interest on Investments	\$22,991	\$10,006	\$16,598	\$19,542	\$32,527	\$24,080	\$20,400
Miscellaneous Income	\$34,154	\$21,297	\$9,318	\$477,199	\$17,154	\$17,420	\$0
Bond Proceeds	\$80,000	\$550,000	\$0	\$2,547,791	\$979,630	\$744,916	\$3,921,000
Subtotal Other Revenues	\$237,174	\$925,744	\$362,780	\$5,014,551	\$1,119,110	\$856,917	\$3,955,400
Total Revenues	\$4,535,767	\$5,356,603	\$5,745,625	\$10,828,307	\$7,301,772	\$7,349,255	\$10,778,300
Fund Balance					\$6,273,414	\$5,208,591	
Total Revenues					\$13,575,186	\$12,557,846	

Source: City of Ashland.

revs

Table A-2
City of Ashland Water Rate Study
Historical and Budgeted Expenditures by Water System Function

EXPENDITURES	Fiscal Year						
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
SUPPLY	Actual	Actual	Actual	Actual	Actual	Actual	Adopted
Salaries & Wages					\$2,932	\$11,664	\$0
Benefits					\$235	\$2,150	\$0
Subtotal Personal Services					\$3,168	\$13,815	\$0
Infrastructure	\$0	\$0	\$800	\$0	\$135	\$28,011	\$0
Professional Services	\$7,442	\$19,997	\$23,211	\$34,853	\$54,508	\$54,303	\$229,600
Miscellaneous	\$109,916	\$109,457	\$113,392	\$112,533	\$140,783	\$145,109	\$151,050
Other	\$58,791	\$61,459	\$60,408	\$63,664	\$143,393	\$104,638	\$149,900
Subtotal Materials & Services	\$176,148	\$190,913	\$197,810	\$211,050	\$338,820	\$332,061	\$530,550
Capital Outlay	\$75,469	\$108,186	\$193,531	\$59,501	\$1,640,806	\$2,491,193	\$1,209,150
Debt Service	\$22,860	\$23,147	\$23,122	\$21,416	\$22,613	\$22,174	\$9,568
TOTAL SUPPLY	\$274,477	\$322,246	\$414,463	\$291,968	\$2,005,408	\$2,859,242	\$1,749,268
DISTRIBUTION							
Salaries & Wages	\$580,171	\$562,250	\$494,924	\$537,596	\$583,438	\$654,405	\$635,000
Benefits	\$278,819	\$275,600	\$265,372	\$301,271	\$365,844	\$378,422	\$394,750
Subtotal Personal Services	\$858,990	\$837,850	\$760,296	\$838,867	\$949,282	\$1,032,827	\$1,029,750
Office	\$2,195	\$1,480	\$1,605	\$4,120	\$1,322	\$1,252	\$2,650
Small Tools	\$1,873	\$2,961	\$5,473	\$3,503	\$3,081	\$5,545	\$4,000
Uniforms - Clothing	\$1,928	\$828	\$810	\$1,676	\$3,961	\$1,589	\$1,500
Uniforms - Other	\$175	\$1,769	\$2,678	\$404	\$0	\$1,339	\$3,000
Technical	\$3,075	\$2,788	\$6,113	\$859	\$5,174	\$5,433	\$15,000
Chemicals	\$706	\$307	\$1,253	\$2,516	\$3,563	\$111	\$5,500
County Services	\$3,200	\$4,000	\$3,600	\$2,800	\$0	\$3,200	\$4,950
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$15,000
Books & Periodicals	\$48	\$82	\$51	\$89	\$252	\$111	\$200
Subtotal Supplies	\$13,200	\$14,215	\$21,582	\$15,967	\$17,352	\$18,582	\$51,800
Fleet Maintenance	\$73,500	\$73,500	\$66,340	\$66,340	\$66,340	\$66,340	\$66,340
Fuel	\$24,692	\$29,117	\$27,218	\$25,849	\$19,338	\$14,342	\$28,000
Replacement	\$51,300	\$51,300	\$51,300	\$51,300	\$51,300	\$51,300	\$61,560
Electricity	\$28,771	\$21,488	\$22,101	\$22,931	\$31,322	\$51,618	\$60,000
Water	\$881	\$460	\$385	\$0	\$0	\$0	\$0
Wastewater & Other	\$0	\$130	\$0	\$0	\$0	\$0	\$300
Custodial	\$0	\$9	\$16	\$0	\$0	\$0	\$0
Disposal	\$0	\$0	\$0	\$0	\$0	\$214	\$500
Infrastructure	\$42,570	\$43,741	\$67,480	\$91,824	\$91,296	\$73,007	\$115,000
Subtotal Rental, Repair, Maintenance	\$221,714	\$219,745	\$234,838	\$258,243	\$259,596	\$256,820	\$331,700
Local	\$1,207	\$1,178	\$1,167	\$1,222	\$1,347	\$1,353	\$1,200
Long Distance	\$12	\$15	\$17	\$16	\$16	\$18	\$20
Cellular	\$1,577	\$1,523	\$1,961	\$2,036	\$2,428	\$2,667	\$3,700
Computers	\$0	\$0	\$0	\$2,749	\$3,085	\$1,144	\$2,500
Postage	\$188	\$264	\$628	\$432	\$1,459	\$1,539	\$2,000
Radios	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000
Subtotal Communications	\$2,985	\$2,981	\$3,773	\$6,456	\$8,334	\$6,721	\$10,420
Professional Services	\$5,626	\$1,113	\$4,159	\$20,679	\$22,745	\$33,767	\$60,000
Physician/Health	\$0	\$183	\$0	\$187	\$0	\$0	\$0
Other	\$0	\$0	\$184	\$244	\$90	\$39	\$50,000
Subtotal Contractual Services	\$5,626	\$1,296	\$4,343	\$21,110	\$22,835	\$33,806	\$110,000

Table A-2
City of Ashland Water Rate Study
Historical and Budgeted Expenditures by Water System Function

EXPENDITURES	Fiscal Year						
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Central Service	\$549,753	\$549,753	\$570,000	\$632,000	\$646,640	\$659,530	\$692,510
Insurance Service	\$35,760	\$35,760	\$34,900	\$34,900	\$34,900	\$34,900	\$35,600
Technology Debt	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Use of Facilities	\$125,883	\$125,883	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000
Bad Debt Expense	\$6,204	\$10,089	\$7,894	\$3,620	\$22,504	\$13,224	\$12,000
Other	\$0	\$0	\$3,000	\$2,111	\$583	\$0	\$0
Licensing	\$5,546	\$8,623	\$8,423	\$6,321	\$10,965	\$5,104	\$37,700
Subtotal Miscellaneous Charges & Fees	\$773,147	\$780,109	\$754,217	\$808,951	\$845,592	\$842,758	\$907,810
Advertising	\$0	\$0	\$0	\$0	\$0	\$1,875	\$0
Air	\$0	\$0	\$0	\$0	\$0	\$1,533	\$3,000
Personal Vehicle Mileage	\$0	\$0	\$0	\$284	\$0	\$0	\$350
Lodging	\$0	\$517	\$0	\$510	\$0	\$939	\$2,000
Meals	\$0	\$1,006	\$0	\$113	\$0	\$334	\$350
Training	\$2,602	\$423	\$2,470	\$1,655	\$0	\$89	\$4,000
Dues	\$268	\$1,082	\$0	\$0	\$0	\$0	\$0
Medical & Laboratory	\$9,595	\$10,710	\$10,545	\$11,563	\$11,526	\$12,567	\$15,000
Subtotal Other Purchased Services	\$12,466	\$13,737	\$13,015	\$14,125	\$11,526	\$17,338	\$24,700
Franchise Tax	\$419,978	\$342,525	\$294,695	\$356,283	\$357,799	\$372,200	\$402,653
Capital Outlay	\$53,865	\$72,088	\$109,315	\$84,197	\$206,990	\$104,317	\$1,105,200
Debt Service	\$325,990	\$330,336	\$327,051	\$137,064	\$333,461	\$329,340	\$250,649
TOTAL DISTRIBUTION	\$2,687,960	\$2,614,882	\$2,523,125	\$2,541,263	\$3,012,767	\$3,014,709	\$4,224,682
TREATMENT PLANT							
Salaries & Wages	\$275,564	\$298,719	\$294,268	\$312,259	\$308,548	\$332,754	\$340,050
Benefits	\$112,364	\$140,315	\$134,534	\$154,592	\$158,437	\$177,449	\$197,320
Subtotal Personal Services	\$387,929	\$439,034	\$428,801	\$466,851	\$466,985	\$510,203	\$537,370
Office	\$2,330	\$5,154	\$5,196	\$2,214	\$1,544	\$1,180	\$2,000
Small Tools	\$798	\$324	\$463	\$739	\$559	\$1,142	\$800
Uniforms - Clothing	\$1,197	\$454	\$1,131	\$805	\$686	\$2,084	\$2,500
Uniforms - Other	\$245	\$443	\$774	\$567	\$60	\$383	\$500
Technical	\$12,154	\$10,438	\$9,766	\$15,213	\$20,128	\$10,446	\$22,000
Chemicals	\$147,418	\$131,893	\$111,049	\$128,767	\$157,280	\$171,617	\$220,000
Emergency Work	(\$12)	\$0	\$0	\$30	\$0	\$0	\$0
Books & Periodicals	\$0	\$140	\$126	\$186	\$0	\$170	\$150
Subtotal Supplies	\$164,131	\$148,846	\$128,505	\$148,521	\$180,257	\$187,021	\$247,950
Fleet Maintenance	\$10,200	\$10,200	\$9,200	\$9,200	\$9,200	\$9,200	\$9,397
Fuel	\$3,211	\$4,568	\$6,255	\$5,618	\$9,846	\$7,334	\$6,500
Replacement	\$900	\$900	\$900	\$900	\$900	\$900	\$1,080
Maintenance	(\$750)	\$0	\$622	\$0	\$0	\$0	\$0
Electricity	\$37,102	\$38,965	\$46,948	\$33,378	\$34,855	\$38,552	\$38,000
Custodial	\$170	\$476	\$26	\$98	\$86	\$116	\$1,000
Grounds Care	\$2,873	\$988	\$1,064	\$79	\$308	\$266	\$1,500
Infrastructure	\$9,023	\$7,077	\$11,042	\$10,176	\$4,871	\$21,531	\$15,000
Subtotal Rental, Repair, Maintenance	\$62,729	\$63,174	\$76,057	\$59,450	\$60,067	\$77,898	\$72,477

Table A-2
City of Ashland Water Rate Study
Historical and Budgeted Expenditures by Water System Function

EXPENDITURES	Fiscal Year						
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Local	\$5,566	\$5,485	\$5,532	\$5,651	\$5,665	\$5,661	\$5,600
Long Distance	\$1	\$0	\$0	\$0	\$0	\$0	\$10
Cellular	\$477	\$444	\$262	\$263	\$252	\$493	\$500
Computers	\$0	\$0	\$0	\$2,037	\$960	\$9,611	\$2,500
Postage	\$5,408	\$1,933	\$221	\$40	\$217	\$22	\$3,000
Radios	\$0	\$0	\$0	\$0	\$0	\$300	\$100
Subtotal Communications	\$11,452	\$7,862	\$6,015	\$7,990	\$7,094	\$16,087	\$11,710
Professional Services	\$11,880	\$580	\$24,389	\$7,701	\$5,579	\$1,080	\$12,000
Other	\$72	\$0	\$0	\$0	\$0	(\$1,600)	\$0
Subtotal Contractual Services	\$11,952	\$580	\$24,389	\$7,701	\$5,579	(\$520)	\$12,000
Central Service	\$143,119	\$143,119	\$155,000	\$155,000	\$158,100	\$161,200	\$169,260
Insurance Service	\$8,030	\$8,030	\$4,000	\$4,000	\$4,000	\$4,000	\$4,080
Technology Debt	\$28,200	\$28,200	\$28,200	\$28,200	\$28,200	\$28,200	\$28,200
Use of Facilities	\$137,235	\$137,235	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Other	\$0	\$0	\$3,000	\$2,111	\$583	\$0	\$0
Licensing	\$1,155	\$1,709	\$7,850	\$3,222	\$1,194	\$3,714	\$4,700
Subtotal Miscellaneous Charges & Fees	\$317,739	\$318,293	\$298,050	\$292,533	\$292,077	\$297,114	\$306,240
Personal Vehicle Mileage	\$180	\$0	\$198	\$261	\$0	\$142	\$200
Advertising	\$0	\$0	\$0	\$0	\$0	\$78	\$0
Lodging	\$773	\$813	\$1,000	\$1,117	\$1,357	\$2,064	\$2,000
Meals	\$289	\$180	\$389	\$380	\$362	\$188	\$600
Training	\$4,253	\$1,581	\$1,280	\$1,044	\$1,015	\$2,749	\$2,000
Dues	\$70	\$268	\$81	\$81	\$166	\$255	\$270
Medical & Laboratory	\$17,425	\$11,200	\$11,886	\$13,700	\$11,261	\$10,918	\$19,400
Subtotal Other Purchased Services	\$22,990	\$14,042	\$14,834	\$16,583	\$14,161	\$16,394	\$24,470
Capital Outlay	\$79,183	\$1,872	\$4,145	\$98,033	\$50,388	\$108,397	\$2,226,690
Debt Service	\$231,260	\$233,322	\$233,146	\$220,863	\$235,320	\$232,114	\$436,211
TOTAL TREATMENT PLANT	\$1,289,365	\$1,227,024	\$1,213,943	\$1,318,525	\$1,311,928	\$1,444,707	\$3,875,118
FOREST INTERFACE							
Salaries & Wages	\$66,540	\$130,770	\$151,035	\$146,031	\$97,935	\$92,753	\$0
Benefits	\$32,822	\$54,554	\$65,010	\$68,379	\$52,657	\$48,424	\$0
Subtotal Personal Services	\$99,361	\$185,324	\$216,045	\$214,410	\$150,592	\$141,177	\$0
Other	\$120,486	\$181,646	\$268,098	\$2,243,767	\$423,446	\$165,908	\$0
Advertising	\$0	\$465	\$302	\$900	\$1,670	\$1,280	\$0
Personal Vehicle Mileage	\$0	\$165	\$94	\$286	\$48	\$339	\$0
Meals	\$0	\$0	\$0	\$0	\$48	\$0	\$0
Training	\$594	\$658	\$930	\$463	\$2,146	\$2,605	\$0
Forest Commissions	\$575	\$858	\$258	\$258	\$87	\$130	\$0
TOTAL FOREST INTERFACE	\$221,016	\$369,116	\$485,728	\$2,460,085	\$578,038	\$311,440	\$0
SDC REIMBURSEMENT							
Capital Outlay	\$38,321	\$113,549	\$96,007	\$0	\$0	\$0	\$0
Debt Service	\$82,297	\$83,328	\$83,240	\$77,098	\$81,408	\$79,825	\$34,443
Unappropriated - Other Financing	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL SDC REIMBURSEMENT	\$120,618	\$196,877	\$179,246	\$77,098	\$81,408	\$79,825	\$34,443
SDC IMPROVEMENTS							
Contractual	\$0	\$413	\$0	\$1,600	\$947	\$27,093	\$0
Capital Outlay	\$198,014	\$48,370	\$45,273	\$30,537	\$101,554	\$34,419	\$1,298,360
Debt Service	\$41,147	\$41,664	\$41,620	\$38,549	\$40,704	\$383,799	\$180,977
Unappropriated - Other Financing	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL SDC REIMBURSEMENT	\$239,162	\$90,447	\$86,893	\$70,686	\$143,205	\$445,311	\$1,479,337

Table A-2
City of Ashland Water Rate Study
Historical and Budgeted Expenditures by Water System Function

EXPENDITURES	Fiscal Year						
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
CONSERVATION							
Salaries & Wages	\$73,475	\$69,630	\$49,841	\$51,505	\$77,643	\$87,799	\$105,240
Benefits	\$34,263	\$34,852	\$23,111	\$22,385	\$42,088	\$44,734	\$64,950
Subtotal Personal Services	\$107,737	\$104,482	\$72,952	\$73,889	\$119,731	\$132,532	\$170,190
Office	\$651	\$511	\$1,914	\$231	\$581	\$536	\$4,550
Small Tools	\$24	\$27	\$918	\$13	\$35	\$78	\$200
Uniforms - Clothing	\$47	\$0	\$148	\$118	\$0	\$0	\$200
Uniforms - Other	\$0	\$0	\$0	\$29	\$0	\$0	\$125
Technical	\$0	\$0	\$0	\$40	\$0	\$740	\$800
Meetings	\$0	\$50	\$0	\$29	\$0	\$156	\$100
Books & Periodicals	\$16	\$0	\$224	\$41	\$0	\$0	\$100
Subtotal Supplies	\$739	\$588	\$3,204	\$500	\$616	\$1,510	\$6,075
Fleet Maintenance	\$300	\$300	\$270	\$270	\$270	\$270	\$270
Fuel	\$0	\$126	\$0	\$57	\$227	\$58	\$150
Replacement	\$5,790	\$5,790	\$5,790	\$5,790	\$5,790	\$5,790	\$5,790
Rental Charges	\$0	\$42	\$124	\$122	\$121	\$121	\$125
Subtotal Rental, Repair, Maintenance	\$6,090	\$6,258	\$6,184	\$6,240	\$6,408	\$6,239	\$6,335
Local	\$82	\$0	\$0	\$38	\$159	\$160	\$100
Long Distance	\$0	\$0	\$0	\$0	\$0	\$0	\$50
Cellular	\$112	\$95	\$94	\$95	\$214	\$525	\$0
Computers	\$0	\$0	\$756	\$317	\$0	\$0	\$0
Postage	\$0	\$0	\$36	\$0	\$0	\$28	\$100
Subtotal Communications	\$193	\$95	\$886	\$450	\$372	\$713	\$250
Professional Services	\$0	\$0	\$56	\$0	\$0	\$8,271	\$2,000
Central Service	\$23,625	\$23,625	\$23,700	\$23,700	\$24,170	\$24,650	\$25,880
Insurance Service	\$2,245	\$2,245	\$3,370	\$3,370	\$3,370	\$3,370	\$3,440
Use of Facilities	\$15,085	\$15,085	\$7,500	\$7,500	\$7,500	\$7,500	\$8,250
Subtotal Miscellaneous Charges & Fees	\$40,955	\$40,955	\$34,626	\$34,570	\$35,040	\$43,791	\$39,570
Advertising	\$333	\$0	\$2,113	\$1,068	\$290	\$132	\$1,600
Printing & Binding	\$36	\$0	\$0	\$10	\$16	\$0	\$200
Air	\$407	\$241	\$337	\$610	\$302	\$1,538	\$1,500
Personal Vehicle Mileage	\$22	\$215	\$0	\$0	\$106	\$407	\$500
Lodging	\$66	\$1,050	\$73	\$715	\$686	\$1,363	\$2,000
Meals	\$175	\$488	\$142	\$222	\$166	\$295	\$750
Training	\$811	\$0	\$1,220	\$169	\$779	\$730	\$1,000
Dues	\$508	\$125	\$440	\$381	\$783	\$785	\$700
Subtotal Other Purchased Services	\$2,358	\$2,118	\$4,324	\$3,175	\$3,128	\$5,250	\$8,250
Conservation Programs	\$16,982	\$20,999	\$23,539	\$21,191	\$17,884	\$68,805	\$114,500
TOTAL CONSERVATION	\$175,054	\$175,495	\$145,716	\$140,014	\$183,179	\$258,842	\$345,170
MISCELLANEOUS							
Interfund Loans	\$0	\$0	\$200,000	\$200,000	\$150,000	\$0	\$250,000
Contingency	\$0	\$0	\$0	\$0	\$0	\$0	\$170,000
Unappropriated	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL WATER FUND	\$5,007,651	\$4,996,087	\$5,249,115	\$7,099,639	\$7,465,934	\$8,414,076	\$12,128,018

Source: City of Ashland.

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Table A-3
City of Ashland Water Rate Study
Historical and Budgeted Water Fund Operation Expenditures

Expenses	Fiscal Year						Adopted 2015-16
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	
Water Fund Operating Expenses							
Personnel	\$1,454,017	\$1,566,691	\$1,478,094	\$1,594,018	\$1,689,757	\$1,830,555	\$1,737,310
Supplies	\$178,069	\$163,649	\$153,291	\$164,988	\$198,225	\$207,113	\$305,825
Repair & Maintenance	\$290,532	\$289,177	\$317,079	\$323,933	\$326,070	\$340,958	\$410,512
Communications	\$14,630	\$10,938	\$10,675	\$14,896	\$15,801	\$23,521	\$22,380
Contractual Services	\$25,020	\$21,873	\$51,999	\$63,664	\$82,921	\$95,860	\$353,600
Central Service	\$716,497	\$716,497	\$748,700	\$810,700	\$828,910	\$845,380	\$887,650
Miscellaneous Charges	\$525,259	\$532,316	\$451,585	\$437,887	\$484,583	\$483,392	\$517,020
Other Purchased Services	\$96,604	\$91,357	\$92,581	\$97,546	\$172,208	\$143,619	\$207,320
Franchise Tax	\$419,978	\$342,525	\$294,695	\$356,283	\$357,799	\$372,200	\$402,653
Conservation Programs	\$16,982	\$20,999	\$23,539	\$21,191	\$17,884	\$68,805	\$114,500
Other Forest Interface	\$221,016	\$369,116	\$485,728	\$2,460,085	\$578,038	\$311,440	\$0
Other Supply Costs	\$0	\$0	\$800	\$0	\$135	\$28,011	\$0
Subtotal Operating Expenses	\$3,958,605	\$4,125,137	\$4,108,767	\$6,345,190	\$4,752,332	\$4,750,855	\$4,958,770
Capital Outlay	\$208,517	\$182,146	\$306,991	\$241,732	\$1,898,185	\$2,703,906	\$4,541,040
Total	\$4,167,122	\$4,307,283	\$4,415,758	\$6,586,922	\$6,650,517	\$7,454,761	\$9,499,810

Source: City of Ashland.

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Table A-4

City of Ashland Water Rate Study

Water Capital Improvement Projects Benefitting Existing Customers in Inflated Dollars

Water Improvement	Total Cost Estimate	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
Water Supply								
FERC Part 12 Dam Safety Inspection (50% Electric, 50% Water) [1]	\$11,950	\$0	\$11,950	\$0	\$0	\$0	\$0	\$0
Ashland Creek West Fork Bridge Construction [1]	\$31,300	\$0	\$31,300	\$0	\$0	\$0	\$0	\$0
Sediment TMDL in Reeder Resv. [1]	\$32,800	\$0	\$15,925	\$0	\$0	\$16,875	\$0	\$0
Reeder Resv Access Road TMDL Compliance [1]	\$28,150	\$28,150	\$0	\$0	\$0	\$0	\$0	\$0
East & West Fork Transmission Line Rehabilitation	\$300,000	\$0	\$300,000	\$0	\$0	\$0	\$0	\$0
Reeder Resv Variable Depth Intake	\$126,700	\$0	\$0	\$0	\$0	\$126,700	\$0	\$0
TID Terrace St Pump Station Improvements	\$255,000	\$255,000	\$0	\$0	\$0	\$0	\$0	\$0
TID Canal Piping: Starlite to Terrace Street [1]	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Emergency TAP Pipeline & Pump	\$920,000	\$920,000	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Water Supply	\$1,705,900	\$1,203,150	\$359,175	\$0	\$0	\$143,575	\$0	\$0
Water Treatment & Storage								
Permanganate Feed Facility Study & Implementation	\$307,200	\$307,200	\$0	\$0	\$0	\$0	\$0	\$0
Raw Water Bypass Measurement	\$25,000	\$0	\$25,000	\$0	\$0	\$0	\$0	\$0
2.6-MGD Reservoir & Clearwell ("Crowson II") [1]	\$7,322,940	\$778,320	\$3,223,980	\$3,320,640	\$0	\$0	\$0	\$0
2.5 MGD Water Treatment Plant [1]	\$13,041,810	\$1,043,370	\$5,910,570	\$6,087,870	\$0	\$0	\$0	\$0
Subtotal Treatment & Storage	\$20,696,950	\$2,128,890	\$9,159,550	\$9,408,510	\$0	\$0	\$0	\$0
Water Distribution								
Park Estates Pump Station/Loop Road Reservoir Alternatives	\$2,527,600	\$618,000	\$1,909,600	\$0	\$0	\$0	\$0	\$0
Radio Read Meter Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hydrant Replacement Program	\$172,300	\$0	\$0	\$0	\$55,700	\$57,400	\$59,200	\$0
Granite Reservoir Valving	\$123,000	\$0	\$0	\$123,000	\$0	\$0	\$0	\$0
Subtotal Water Distribution	\$2,822,900	\$618,000	\$1,909,600	\$123,000	\$55,700	\$57,400	\$59,200	\$0
Mainline Projects (see page 2)	\$3,398,500	\$373,200	\$644,300	\$1,063,800	\$226,700	\$345,500	\$410,000	\$335,000
TOTAL WATER CAPITAL PROJECTS (inflated dollars)	\$28,624,250	\$4,323,240	\$12,072,625	\$10,595,310	\$282,400	\$546,475	\$469,200	\$335,000

Table A-4

City of Ashland Water Rate Study
Water Capital Improvement Projects Benefitting Existing Customers in Inflated Dollars

Water Improvement	Total Cost Estimate	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
Water Mainline Projects								
Oak Street - Nevada to Bear Creek Bridge	\$273,200	\$273,200	\$0	\$0	\$0	\$0	\$0	\$0
Lithia Water Line Replacement - Pioneer Street to Plaza	\$100,000	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0
Ivy Lane - Morton Street to west end of Ivy Lane	\$346,200	\$0	\$346,200	\$0	\$0	\$0	\$0	\$0
Ivy Lane - South Mountain to FH-16AD-038	\$100,300	\$0	\$100,300	\$0	\$0	\$0	\$0	\$0
A Street - 1st St to 6th St	\$515,000	\$0	\$150,000	\$365,000	\$0	\$0	\$0	\$0
Parker Street - Walker Ave to Lit Way	\$198,500	\$0	\$23,900	\$174,600	\$0	\$0	\$0	\$0
Harmony Lane - Siskiyou Blvd to Lit Way	\$79,500	\$0	\$11,900	\$67,600	\$0	\$0	\$0	\$0
Lit Way - Joy Avenue to Ray Lane	\$42,900	\$0	\$6,000	\$36,900	\$0	\$0	\$0	\$0
Ray Lane - Lit Way to Joy Ave	\$66,300	\$0	\$6,000	\$60,300	\$0	\$0	\$0	\$0
Beach Street - Larkin Lane to Iowa Street	\$114,900	\$0	\$0	\$12,300	\$102,600	\$0	\$0	\$0
Siskiyou Boulevard - Crowson Road south towards I-5 Exit 11	\$168,800	\$0	\$0	\$168,800	\$0	\$0	\$0	\$0
AHS Property - Fire hydrant in school property	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Meade Street - Vista St/Hillcrest to Iowa Street	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ditch Road - Strawberry PS to Grandview Dr	\$187,200	\$0	\$0	\$92,200	\$95,000	\$0	\$0	\$0
Lithia Water Line	\$86,100	\$0	\$0	\$86,100	\$0	\$0	\$0	\$0
Elkader Street - Ivy Lane to Pinecrest Trail	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ivy Lane - South Mountain Ave to Elkader St	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
South Mountain Ave - S. Mountain Ave to Emma St	\$7,600	\$0	\$0	\$0	\$7,600	\$0	\$0	\$0
South Mountain Ave - From S. Mountain Ave to FH 16AD-043	\$21,500	\$0	\$0	\$0	\$21,500	\$0	\$0	\$0
Vista Street - Fork St to Hillcrest St	\$155,000	\$0	\$0	\$0	\$0	\$155,000	\$0	\$0
Vista Street - Intersection of Vista, Hillcrest, Glenview Dr	\$5,500	\$0	\$0	\$0	\$0	\$5,500	\$0	\$0
Pinecrest Terrace - Penny Drive to Woodland Drive	\$185,000	\$0	\$0	\$0	\$0	\$185,000	\$0	\$0
Pinecrest Terrace - Walker Ave to Starlight Place	\$410,000	\$0	\$0	\$0	\$0	\$0	\$410,000	\$0
Penny Drive - Woodland Dr to Weissenback Way	\$85,000	\$0	\$0	\$0	\$0	\$0	\$0	\$85,000
Woodland Drive - Leonard St to Pinecrest Terrace	\$55,000	\$0	\$0	\$0	\$0	\$0	\$0	\$55,000
Hiawatha Place - Walker Ave to FH 15CA-020	\$60,000	\$0	\$0	\$0	\$0	\$0	\$0	\$60,000
Morton Street - FH 16AC-023 to PRV 12	\$135,000	\$0	\$0	\$0	\$0	\$0	\$0	\$135,000
Subtotal Mainline Projects (inflated dollars)	\$3,398,500	\$373,200	\$644,300	\$1,063,800	\$226,700	\$345,500	\$410,000	\$335,000

Source: City of Ashland and HEC.

[1] Portion (or all) of project to be funded by future customers (excluded from table).

Table A-5
City of Ashland Water Rate Study
Existing Debt

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Bonds	Base	1	2	3	4	5	6
2009 G.O Bonds	\$66,666	\$66,666	\$66,666	\$66,666	\$66,666	\$66,666	\$66,666
2013 G.O. Bonds	\$195,275	\$197,225	\$194,125	\$195,975	\$197,725	\$194,425	\$196,075
2013 G.O Bonds Refinancing	\$191,350	\$188,050	\$189,700	\$191,250	\$192,700	\$189,100	\$185,500
MWC Debt for SDC Purchase	\$163,768	\$163,768	\$163,768	\$163,768	\$163,768	\$163,768	\$163,768
Total Existing Debt Service	\$617,059	\$615,709	\$614,259	\$617,659	\$620,859	\$613,959	\$612,009
State of Oregon Revolving Fund (estimated) [1]			\$157,000	\$103,000	\$103,000	\$103,000	\$103,000
Total Existing Debt Service with SRF	\$617,059	\$615,709	\$771,259	\$720,659	\$723,859	\$716,959	\$715,009

Source: City of Ashland and HEC.

[1] SRF Loan Principal Years 29 Interest Rate 1.0% Project completed by May 2016. Assume first debt payment is due Dec 1, 2017.

	2014-15	2015-16	2016-17	Total
Estimated Disbursements	\$870,000	\$1,150,000	\$541,027	\$2,561,027
Interest	\$8,700	\$20,200	\$25,610	\$54,510

Table A-6
City of Ashland Water Rate Study
Estimated New City Debt

Facilities and Cost	Assumptions	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Water Improvements [1]		\$2,099,310	\$0	\$0	\$0	\$0	\$0	\$0
Bond Sizing								
Capitalized Interest	6 months	\$47,230	\$0	\$0	\$0	\$0	\$0	\$0
Issuance Costs	3%	\$62,980	\$0	\$0	\$0	\$0	\$0	\$0
Underwriter's Discount	1%	\$20,990	\$0	\$0	\$0	\$0	\$0	\$0
Bond Reserve Fund	1 year debt service	\$188,000	\$0	\$0	\$0	\$0	\$0	\$0
Estimated Bond Size		\$2,418,510	\$0	\$0	\$0	\$0	\$0	\$0
Bond Size Adjusted for Rounding	1.160 bond load	\$2,435,000	\$0	\$0	\$0	\$0	\$0	\$0
Estimated Annual Debt Service	[2]	\$188,000	\$0	\$0	\$0	\$0	\$0	\$0

Source: HEC

new debt

[1] Existing customer share only. Excludes cost of improvements benefitting future customers.

[2] Debt service estimate based on sale of revenue bonds with the following terms: Assumed first payment due the following fiscal year.
interest rate: 4.5%
years: 20

Table A-7
City of Ashland Water Rate Study
Estimated Debt for SRF Funded Facilities

Item	2015-16	2016-17	2017-18	Total
Treatment Plant				
2.5 MGD Water Treatment Plant	\$1,043,370	\$5,910,570	\$6,087,870	\$13,041,810
Contingency 10%	\$104,337	\$591,057	\$608,787	\$1,304,181
Total Estimated Treatment Plant Cost	\$1,147,707	\$6,501,627	\$6,696,657	\$14,345,991
Estimated Interest	\$24,561	\$163,696	\$307,004	\$495,261
Annual Debt Service [1]				\$652,900
Total Payments				\$19,587,000
Principal				\$14,345,991
Interest				\$5,241,009
Crowson II Reservoir				
Tank	\$778,320	\$3,223,980	\$3,320,640	\$7,322,940
Contingency (5%)	\$38,916	\$161,199	\$166,032	\$732,294
Total Estimated Reservoir Cost	\$817,236	\$3,385,179	\$3,486,672	\$8,055,234
Estimated Interest	\$29,175	\$150,026	\$274,500	\$453,702
Annual Debt Service [1]				\$492,500
Total Payments				\$12,312,500
Principal				\$8,055,234
Interest				\$4,257,266
TOTAL SRF ANNUAL DEBT SERVICE				\$1,145,400

Source: City of Ashland.

srf

[1] Terms assumed:	Plant	Tank
Interest	2.14%	3.57%
Years	30	25

Assumes projects completed by October 2017 and first debt payment is due Dec 1, 2018.

Table A-8
City of Ashland Water Rate Study
Estimated Depreciation of New Assets

Improvement	Life (years)	2015-16 Base	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
Water Supply								
FERC Part 12 Dam Safety Inspection (50% Electric, 50% Water) [1]	20	\$0	\$2,390	\$2,390	\$2,390	\$2,390	\$2,390	\$2,390
Ashland Creek West Fork Bridge Construction [1]	80	\$0	\$1,565	\$1,565	\$1,565	\$1,565	\$1,565	\$1,565
Sediment TMDL in Reeder Resv. [1]	50	\$0	\$1,274	\$1,274	\$1,274	\$2,624	\$2,624	\$2,624
Reeder Resv Access Road TMDL Compliance [1]	40	\$2,815	\$2,815	\$2,815	\$2,815	\$2,815	\$2,815	\$2,815
East & West Fork Transmission Line Rehabilitation	60	\$0	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Reeder Resv Variable Depth Intake	100	\$0	\$0	\$0	\$0	\$1,267	\$1,267	\$1,267
TID Terrace St Pump Station Improvements	50	\$5,100	\$5,100	\$5,100	\$5,100	\$5,100	\$5,100	\$5,100
TID Canal Piping [1], [2]	60	\$47,000	\$47,000	\$47,000	\$47,000	\$47,000	\$47,000	\$47,000
Emergency TAP Pipeline & Pump	80	\$11,500	\$11,500	\$11,500	\$11,500	\$11,500	\$11,500	\$11,500
Subtotal Water Supply		\$66,415	\$76,644	\$76,644	\$76,644	\$79,261	\$79,261	\$79,261
Water Treatment & Storage								
Permanganate Feed Facility Study & Implementation	40	\$7,680	\$7,680	\$7,680	\$7,680	\$7,680	\$7,680	\$7,680
Raw Water Bypass Measurement	40	\$0	\$625	\$625	\$625	\$625	\$625	\$625
2.6-MG Reservoir & Clearwell ("Crowson II") [1]	60	\$14,413	\$74,117	\$135,610	\$135,610	\$135,610	\$135,610	\$135,610
2.5 MGD Water Treatment Plant [1]	80	\$14,491	\$96,583	\$181,136	\$181,136	\$181,136	\$181,136	\$181,136
Subtotal Treatment & Storage		\$36,585	\$179,004	\$325,051	\$325,051	\$325,051	\$325,051	\$325,051
Water Distribution								
Park Estates Pump Station/Loop Road Reservoir Alternatives	50	\$12,360	\$50,552	\$50,552	\$50,552	\$50,552	\$50,552	\$50,552
Radio Read Meter Program	15	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hydrant Replacement Program	50	\$0	\$0	\$0	\$1,114	\$2,262	\$3,446	\$3,446
Granite Reservoir Valving	50	\$0	\$0	\$2,460	\$2,460	\$2,460	\$2,460	\$2,460
Subtotal Water Distribution		\$12,360	\$50,552	\$53,012	\$54,126	\$55,274	\$56,458	\$56,458
Water Mains	60	\$6,220	\$16,958	\$34,688	\$38,467	\$44,225	\$51,058	\$56,642
Total		\$121,580	\$323,159	\$489,396	\$494,288	\$503,811	\$511,829	\$517,412

Source: HEC.

new depr

[1] Portion (or all) of improvement project to be funded by future customers. Replacement costs paid for by existing customers.

[2] New canal improvements paid by new customers. Replacement costs paid by existing customers.

Table A-9

City of Ashland Water Rate Study
Average Annual Change in Operating Costs Compared with Indices

Expenses and Indices	Fiscal Year Ending					Change	% Change
	2010	2011	2012	2013	2014		
Water Fund Operating Expenses [1]							
Personnel	\$1,454,017	\$1,566,691	\$1,478,094	\$1,594,018	\$1,689,757	\$1,830,555	\$376,538 4.7%
Supplies	\$178,069	\$163,649	\$153,291	\$164,988	\$198,225	\$207,113	\$29,044 3.1%
Repair & Maintenance	\$290,532	\$289,177	\$317,079	\$323,933	\$326,070	\$340,958	\$50,426 3.3%
Communications	\$14,630	\$10,938	\$10,675	\$14,896	\$15,801	\$23,521	\$8,891 10.0%
Contractual Services	\$25,020	\$21,873	\$51,999	\$63,664	\$82,921	\$95,860	\$70,839 30.8%
Central Service	\$716,497	\$716,497	\$748,700	\$810,700	\$828,910	\$845,380	\$128,883 3.4%
Miscellaneous Charges	\$525,259	\$532,316	\$451,585	\$437,887	\$484,583	\$483,392	(\$41,867) -1.6%
Other Purchased Services	\$96,604	\$91,357	\$92,581	\$97,546	\$172,208	\$143,619	\$47,015 8.3%
Franchise Tax	\$419,978	\$342,525	\$294,695	\$356,283	\$357,799	\$372,200	(\$47,778) -2.4%
Conservation Programs	\$16,982	\$20,999	\$23,539	\$21,191	\$17,884	\$68,805	\$51,823 32.3%
Total	\$3,737,590	\$3,756,021	\$3,622,240	\$3,885,105	\$4,174,159	\$4,411,404	\$673,814 3.4%
Engineering News Record							
ENR Construction Cost Index 20-City [2]	June 2010 8,805.00	June 2011 9,053.00	June 2012 9,291.00	June 2013 9,542.00	June 2014 9,800.00	June 2015 10,039.00	1,234.00 2.7%
Bureau of Labor Statistics							
Consumer Price Index - Size D (Cities<50,000)	211.09	218.86	223.83	228.61	233.39	234.06	22.96 2.1%
Consumer Price Index - US City Average	217.29	224.99	228.83	232.86	237.69	237.79	20.50 1.8%
Consumer Price Index - Portland-Salem, OR	217.51	223.11	228.75	233.74	239.75	242.98	25.47 2.2%
Source: City of Ashland, Engineering News Record, Bureau of Labor Statistics. cpi							

Source: City of Ashland, Engineering News Record, Bureau of Labor Statistics.

[1] Excludes Forest Interface which is no longer part of the Water Fund.

[2] Average annual increase for the past 20 years (June 1995-2015) is 3.12%.

Table A-10
City of Ashland Water Rate Study
Cost of TID Non-Potable Water Deliveries

TID Total Annual Cost		Estimated Cost	
Costs			
Contracted Water		\$0	
City Maintenance Costs [1]		\$30,070	
Canal Depreciation		\$0	
TID Staffing and Materials Costs [2]		\$22,800	
Total Annual Cost		\$52,870	
		Typical Delivery [3]	
		Cubic Feet	Acre Feet
Total Use	a	24,463,405	562
SOU Use [4]	b	7,101,690	163
Lithia Park Use [4]	c	1,020,495	23
Remaining TID Irrigators	d = a-b-c	16,341,220	375

Source: City of Ashland and HEC.

tid calc

[1] See Table A-11. Costs shown are 73% of the total costs in 2013 - see Table A-12.

[2] Estimated finance and public works departments time and materials costs to manage T.I.D. agreements, billing and customer service.

[3] Under the 1924, 1926, and 1935 contract the City can take up to 769 acre feet in a typical year for any purpose. The City also has an agreement with TID for an additional 600 acre feet for municipal purposes. On average, City TID customers use 73% of the 769 acre feet contract and the City municipal customers use the 600 acre feet contract. See Table A-12.

[4] Uses water consumption from the last non-drought year (2012).

Table A-11
City of Ashland Water Rate Study
TID Canal Maintenance Costs

Cost	2013	2014
Man Hours	1205	1411
Labor Cost	\$33,076	\$30,753
Equipment Cost	\$8,098	\$33,671
Total Cost	\$41,174	\$64,425

Source: City of Ashland.

tid maint

Table A-12
City of Ashland Water Rate Study
Actual TID Non-Potable Water Deliveries (Past 10 Years)

Year	Total Acre-Feet [1]	Municipal Use [2]	Spill to Creek	Irrigation Use	1924, 1926 & 1935 Contract [3]	Irrigation Use as % of Contract
<i>All Figures in Acre Feet</i>						
2004	751.71	0.00	123.75	627.96	769.00	82%
2005	478.57	0.00	123.75	354.82	769.00	46%
2006	659.93	0.00	123.75	536.18	769.00	70%
2007	560.14	0.00	123.75	436.39	769.00	57%
2008	726.56	0.00	123.75	602.81	769.00	78%
2009	742.90	224.24	123.75	394.91	769.00	51%
2010	818.73	0.00	123.75	694.98	769.00	90%
2011	755.37	0.00	123.75	631.62	769.00	82%
2012	731.81	0.00	123.75	608.06	769.00	79%
2013	981.49	205.15	123.75	652.59	654.00	100%
2014	1,173.94	565.44	123.75	484.75	654.00	74%
Average Excluding Drought Years [4]				561.60	769.00	73%

Source: Talent Irrigation District.

tid deliv

[1] TID measurements.

[2] City measurements.

[3] In 2013 and 2014 TID curtailed the amount allowed to 654 acre feet.

[4] Excludes drought years 2009, 2013, and 2014.

Table A-13

City of Ashland Water Rate Study
Meter Replacement Fee Calculation

Item	Assumption / Total	Meter Size							
		3/4"	1"	1-1/2"	2"	3"	4"	6"	8"
New Meter with Transponder [1]		\$220	\$330	\$520	\$700	\$1,500	\$3,260	\$4,520	\$5,450
Installation Costs [2]	20%	\$44	\$66	\$104	\$140	\$300	\$652	\$904	\$1,090
Administration Costs	5%	\$11	\$17	\$26	\$35	\$75	\$163	\$226	\$273
Total Cost per Meter	\$312	\$275	\$413	\$650	\$875	\$1,875	\$4,075	\$5,650	\$6,813
Replacement Interval (years)		20	20	20	20	20	20	20	20
Cost per Meter per Year		\$14	\$21	\$33	\$44	\$94	\$204	\$283	\$341
Monthly Cost per Meter		\$1.15	\$1.72	\$2.71	\$3.65	\$7.81	\$16.98	\$23.54	\$28.39
Cost per Billing Meter [3]		\$1.17	\$1.75	\$2.75	\$3.71	\$7.94	\$17.26	\$23.94	\$28.86

Source: City of Ashland and HEC.

meter prog

[1] Prices quoted from City vendor, November 2014.

[2] Actual installation costs vary by meter size as a percentage of meter cost.

[3] Accounts for 2% of meters not billable at any one time.

Table A-14
City of Ashland Water Rate Study
Calculation of Functional Allocation Revenue Requirement

Operating Expenditures	BUDGET 2015-16	Allocation Basis	Customer	Meters & Services	Capacity	Commodity	Unclassified
	<i>with addition of</i>	[1]					
SUPPLY	<i>TAP water</i>						
Salaries & Wages	\$0	Avg. of Classified	0%	0%	0%	0%	100%
Benefits	\$0	Avg. of Classified	0%	0%	0%	0%	100%
Infrastructure	\$0	Plant In Service	9%	2%	74%	15%	0%
Professional Services	\$229,600	Avg. of Classified	0%	0%	0%	0%	100%
Miscellaneous	\$151,050	Avg. of Classified	0%	0%	0%	0%	100%
Other	\$149,900	Avg. of Classified	0%	0%	0%	0%	100%
Capital Outlay	\$1,209,150	Plant In Service	9%	2%	74%	15%	0%
Debt Service	\$9,568	Peaking Month Use	0%	0%	55%	45%	0%
TAP Water	\$44,000	Utilities	0%	0%	0%	100%	0%
TOTAL SUPPLY	\$1,793,268						
DISTRIBUTION							
Salaries & Wages	\$635,000	Avg. of Classified	0%	0%	0%	0%	100%
Benefits	\$394,750	Avg. of Classified	0%	0%	0%	0%	100%
Office	\$2,650	Customers	100%	0%	0%	0%	0%
Small Tools	\$4,000	Peaking Month Use	0%	55%	0%	45%	0%
Uniforms - Clothing	\$1,500	Plant In Service	9%	2%	74%	15%	0%
Uniforms - Other	\$3,000	Plant In Service	9%	2%	74%	15%	0%
Technical	\$15,000	Peaking Month Use	0%	55%	0%	45%	0%
Chemicals	\$5,500	Peaking Month Use	0%	55%	0%	45%	0%
County Services	\$4,950	Customers	100%	0%	0%	0%	0%
Other	\$15,000	Avg. of Classified	0%	0%	0%	0%	100%
Books & Periodicals	\$200	Customers	100%	0%	0%	0%	0%
Fleet Maintenance	\$66,340	Peaking Month Use	0%	55%	0%	45%	0%
Fuel	\$28,000	Peaking Month Use	0%	55%	0%	45%	0%
Replacement	\$61,560	Peaking Month Use	0%	55%	0%	45%	0%
Electricity	\$60,000	Utilities	0%	0%	0%	100%	0%
Water	\$0	Utilities	0%	0%	0%	100%	0%
Wastewater & Other	\$300	Utilities	0%	0%	0%	100%	0%
Custodial	\$0	Avg. of Classified	0%	0%	0%	0%	100%
Disposal	\$500	Plant In Service	9%	2%	74%	15%	0%
Infrastructure	\$115,000	Plant In Service	9%	2%	74%	15%	0%
Local	\$1,200	Customers	100%	0%	0%	0%	0%
Long Distance	\$20	Customers	100%	0%	0%	0%	0%
Cellular	\$3,700	Customers	100%	0%	0%	0%	0%
Computers	\$2,500	Customers	100%	0%	0%	0%	0%
Postage	\$2,000	Customers	100%	0%	0%	0%	0%
Radios	\$1,000	Customers	100%	0%	0%	0%	0%
Professional Services	\$60,000	Avg. of Classified	0%	0%	0%	0%	100%
Physician/Health	\$0	Avg. of Classified	0%	0%	0%	0%	100%
Other	\$50,000	Avg. of Classified	0%	0%	0%	0%	100%
Central Service	\$692,510	Customers	100%	0%	0%	0%	0%
Insurance Service	\$35,600	Customers	100%	0%	0%	0%	0%
Technology Debt	\$50,000	Peaking Month Use	0%	55%	0%	45%	0%
Use of Facilities	\$80,000	Peaking Month Use	0%	55%	0%	45%	0%
Bad Debt Expense	\$12,000	Plant In Service	9%	2%	74%	15%	0%
Other	\$0	Customers	100%	0%	0%	0%	0%
Licensing	\$37,700	Plant In Service	9%	2%	74%	15%	0%
Air	\$3,000	Customers	100%	0%	0%	0%	0%
Personal Vehicle Mileage	\$350	Avg. of Classified	0%	0%	0%	0%	100%
Lodging	\$2,000	Avg. of Classified	0%	0%	0%	0%	100%
Meals	\$350	Avg. of Classified	0%	0%	0%	0%	100%
Training	\$4,000	Avg. of Classified	0%	0%	0%	0%	100%
Dues	\$0	Avg. of Classified	0%	0%	0%	0%	100%
Medical & Laboratory	\$15,000	Avg. of Classified	0%	0%	0%	0%	100%
Franchise Tax	\$402,653	Utilities	0%	0%	0%	100%	0%
Capital Outlay	\$1,105,200	Plant In Service	9%	2%	74%	15%	0%
Debt Service	\$250,649	Peaking Month Use	0%	0%	55%	45%	0%
TOTAL DISTRIBUTION	\$4,224,682						
TREATMENT PLANT							
Salaries & Wages	\$340,050	Avg. of Classified	0%	0%	0%	0%	100%
Benefits	\$197,320	Avg. of Classified	0%	0%	0%	0%	100%
Office	\$2,000	Customers	100%	0%	0%	0%	0%
Small Tools	\$800	Peaking Month Use	0%	55%	0%	45%	0%
Uniforms - Clothing	\$2,500	Plant In Service	9%	2%	74%	15%	0%
Uniforms - Other	\$500	Plant In Service	9%	2%	74%	15%	0%
Technical	\$22,000	Peaking Month Use	0%	55%	0%	45%	0%
Chemicals	\$220,000	Utilities	0%	0%	0%	100%	0%

Table A-14
City of Ashland Water Rate Study
Calculation of Functional Allocation Revenue Requirement

Operating Expenditures	BUDGET 2015-16	Allocation Basis	Customer	Meters & Services	Capacity	Commodity	Unclassified
<i>with addition of</i>		[1]					
Emergency Work	\$0	Peaking Month Use	0%	55%	0%	45%	0%
Books & Periodicals	\$150	Customers	100%	0%	0%	0%	0%
Fleet Maintenance	\$9,397	Peaking Month Use	0%	55%	0%	45%	0%
Fuel	\$6,500	Peaking Month Use	0%	55%	0%	45%	0%
Replacement	\$1,080	Peaking Month Use	0%	55%	0%	45%	0%
Maintenance	\$0	Peaking Month Use	0%	55%	0%	45%	0%
Electricity	\$38,000	Utilities	0%	0%	0%	100%	0%
Custodial	\$1,000	Avg. of Classified	0%	0%	0%	0%	100%
Grounds Care	\$1,500	Avg. of Classified	0%	0%	0%	0%	100%
Infrastructure	\$15,000	Plant In Service	9%	2%	74%	15%	0%
Local	\$5,600	Customers	100%	0%	0%	0%	0%
Long Distance	\$10	Customers	100%	0%	0%	0%	0%
Cellular	\$500	Customers	100%	0%	0%	0%	0%
Computers	\$2,500	Customers	100%	0%	0%	0%	0%
Postage	\$3,000	Customers	100%	0%	0%	0%	0%
Radios	\$100	Customers	100%	0%	0%	0%	0%
Professional Services	\$12,000	Avg. of Classified	0%	0%	0%	0%	100%
Other	\$0	Avg. of Classified	0%	0%	0%	0%	100%
Central Service	\$169,260	Customers	100%	0%	0%	0%	0%
Insurance Service	\$4,080	Customers	100%	0%	0%	0%	0%
Technology Debt	\$28,200	Peaking Month Use	0%	55%	0%	45%	0%
Use of Facilities	\$100,000	Peaking Month Use	0%	55%	0%	45%	0%
Other	\$0	Customers	100%	0%	0%	0%	0%
Licensing	\$4,700	Utilities	0%	0%	0%	100%	0%
Personal Vehicle Mileage	\$200	Avg. of Classified	0%	0%	0%	0%	100%
Lodging	\$2,000	Avg. of Classified	0%	0%	0%	0%	100%
Meals	\$600	Avg. of Classified	0%	0%	0%	0%	100%
Training	\$2,000	Avg. of Classified	0%	0%	0%	0%	100%
Dues	\$270	Avg. of Classified	0%	0%	0%	0%	100%
Medical & Laboratory	\$19,400	Avg. of Classified	0%	0%	0%	0%	100%
Capital Outlay	\$2,226,690	Plant In Service	9%	2%	74%	15%	0%
Debt Service	\$436,211	Peaking Month Use	0%	0%	55%	45%	0%
TOTAL TREATMENT PLANT	\$3,875,118						
CONSERVATION							
Salaries & Wages	\$105,240	Avg. of Classified	0%	0%	0%	0%	100%
Benefits	\$64,950	Avg. of Classified	0%	0%	0%	0%	100%
Office	\$4,550	Customers	100%	0%	0%	0%	0%
Small Tools	\$200	Peaking Month Use	0%	55%	0%	45%	0%
Uniforms - Clothing	\$200	Plant In Service	9%	2%	74%	15%	0%
Uniforms - Other	\$125	Plant In Service	9%	2%	74%	15%	0%
Technical	\$800	Peaking Month Use	0%	55%	0%	45%	0%
Meetings	\$100	Customers	100%	0%	0%	0%	0%
Books & Periodicals	\$100	Customers	100%	0%	0%	0%	0%
Fleet Maintenance	\$270	Peaking Month Use	0%	55%	0%	45%	0%
Fuel	\$150	Peaking Month Use	0%	55%	0%	45%	0%
Replacement	\$5,790	Peaking Month Use	0%	55%	0%	45%	0%
Rental Charges	\$125	Peaking Month Use	0%	55%	0%	45%	0%
Local	\$100	Customers	100%	0%	0%	0%	0%
Long Distance	\$50	Customers	100%	0%	0%	0%	0%
Cellular	\$0	Customers	100%	0%	0%	0%	0%
Computers	\$0	Customers	100%	0%	0%	0%	0%
Postage	\$100	Customers	100%	0%	0%	0%	0%
Professional Services	\$2,000	Avg. of Classified	0%	0%	0%	0%	100%
Central Service	\$25,880	Customers	100%	0%	0%	0%	0%
Insurance Service	\$3,440	Customers	100%	0%	0%	0%	0%
Use of Facilities	\$8,250	Peaking Month Use	0%	55%	0%	45%	0%
Advertising	\$1,600	Customers	100%	0%	0%	0%	0%
Printing & Binding	\$200	Customers	100%	0%	0%	0%	0%
Air	\$1,500	Customers	100%	0%	0%	0%	0%
Personal Vehicle Mileage	\$500	Avg. of Classified	0%	0%	0%	0%	100%
Lodging	\$2,000	Avg. of Classified	0%	0%	0%	0%	100%
Meals	\$750	Avg. of Classified	0%	0%	0%	0%	100%
Training	\$1,000	Avg. of Classified	0%	0%	0%	0%	100%
Dues	\$700	Avg. of Classified	0%	0%	0%	0%	100%
Conservation Programs	\$114,500	Utilities	0%	0%	0%	100%	0%
TOTAL CONSERVATION	\$345,170						
TOTAL OPERATING EXPENDITURES	\$10,238,238		\$1,382,804	\$391,007	\$3,901,763	\$2,102,184	\$2,460,480
Unclassified Expenditures Reallocation			\$437,448	\$123,694	\$1,234,316	\$665,022	
Total with Reallocation	\$10,238,238		\$1,820,252	\$514,702	\$5,136,079	\$2,767,206	
Revenue Requirement Allocation Percentages			18%	5%	50%	27%	

Source: HEC.

junc

[1] For allocation of plant in service see Table A-14. For allocation of peaking month use see Table 4.

Table A-15
City of Ashland Water Rate Study
Allocation of Plant in Service

Facility	Percent Allocation				Cost Allocation			
	Meters & Services		Customer		Meters & Services		Customer	
	Customer	Capacity	Commodity	Total	Customer	Capacity	Commodity	Cost Basis
Water Rights Buildings	100%	50%	50%	100%	\$930,299	\$0	\$0	\$930,299
				100%	\$0	\$0	\$12,400	\$24,800
Equipment								
Chlorinator Unit			100%	100%	\$0	\$0	\$15,380	\$15,380
Residual Analyzer			100%	100%	\$0	\$0	\$5,913	\$5,913
Treatment Plant		100%		100%	\$0	\$0	\$51,935	\$51,935
Distribution		80%	20%	100%	\$0	\$0	\$15,186	\$18,983
Services & Meters	100%			100%	\$0	\$35,893	\$0	\$35,893
Vehicles & Trailers	50%		50%	100%	\$25,445	\$0	\$25,445	\$50,890
Miscellaneous Equipment	25%		75%	100%	\$0	\$22,362	\$0	\$89,446
Subtotal Equipment					\$25,445	\$58,254	\$67,121	\$268,440
Improvements								
Services & Meters	100%			100%	\$0	\$236,605	\$0	\$236,605
Subdivision Water Lines	20%	80%		100%	\$1,905,096	\$0	\$7,620,382	\$9,525,478
Water Mains		100%		100%	\$0	\$0	\$10,885,740	\$10,885,740
Reservoir			100%	100%	\$0	\$0	\$0	\$2,238,247
Pump Station			100%	100%	\$0	\$0	\$102,415	\$102,415
Miscellaneous Distribution	25%		75%	100%	\$0	\$526,629	\$0	\$2,106,518
Miscellaneous Other			100%	100%	\$0	\$0	\$759,813	\$759,813
Water Treatment Plant		100%		100%	\$0	\$0	\$5,987,687	\$5,987,687
Fire Hydrants		100%		100%	\$0	\$0	\$40,433	\$40,433
Subtotal Improvements					\$1,905,096	\$763,234	\$24,534,242	\$31,882,935
Total Plant in Service					\$2,860,840	\$821,489	\$24,613,763	\$33,106,474
% of Plant in Service					9%	2%	74%	100%
Source: City of Ashland and HEC.								
								plant

Table A-16
City of Ashland Water Rate Study
Number of Billing Meters

Meter Size	% of Total	TOTAL	Customer Category					
			Residential		Commercial	Irrigation	Government	Fire
			SF	MF				
3/4"	90.1%	7,814	6,723	444	332	179	19	117
1"	5.9%	509	256	68	108	61	16	0
1.5"	1.9%	167	11	51	64	35	6	0
2"	1.7%	145	3	35	45	40	22	0
3"	0.2%	21	0	4	4	7	6	0
4"	0.2%	14	0	4	2	2	6	0
6"	0.0%	2	0	0	0	1	1	0
8"	0.0%	1	0	0	0	0	1	0
Total	100.0%	8,673	6,993	606	555	325	77	117
% of Total		100%	81%	7%	6%	4%	1%	1%

Source: City of Ashland.

meters

Table A-17
City of Ashland Water Rate Study
Typical Water Consumption by Meter Size by Customer Type

Meter Size/ Customer Type	Consumption (2014 Data)												Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
3/4"	Figures in Cubic Feet												
Residential SF	486	460	428	448	550	795	1,073	1,178	1,136	955	678	483	8,187
Residential MF	839	826	813	896	1,057	1,572	1,715	1,733	1,548	1,260	943	851	14,054
Commercial	892	850	767	940	1,077	1,472	1,703	1,773	1,518	1,309	993	856	14,148
Institutional	300	318	352	400	480	791	1,326	1,086	896	1,143	711	378	8,180
Irrigation	297	347	163	533	1,467	2,913	3,503	3,581	3,010	2,099	914	238	19,064
1"													
Residential SF	478	469	474	774	877	1,479	1,948	1,779	1,553	1,318	638	506	12,293
Residential MF	1,242	1,326	1,073	1,223	1,316	1,923	2,171	2,004	1,754	1,534	1,208	1,033	17,809
Commercial	1,258	1,213	1,006	1,322	1,638	2,420	2,513	3,081	2,828	2,141	1,449	1,258	22,127
Institutional	1,010	805	591	856	961	1,176	1,029	983	1,017	1,118	977	634	11,157
Irrigation	234	704	970	718	2,547	3,314	4,647	5,037	3,775	3,014	858	500	26,317
1.5"													
Residential SF	636	594	522	848	1,142	1,699	2,308	2,314	2,265	1,525	1,145	1,156	16,154
Residential MF	2,697	3,479	2,856	3,052	3,511	4,579	4,859	5,116	4,968	4,307	3,773	3,142	46,339
Commercial	2,401	2,227	2,316	3,080	3,757	5,231	6,141	6,234	5,329	4,922	3,518	2,646	47,804
Institutional	1,976	1,818	2,222	1,338	7,820	2,048	1,665	847	797	692	2,650	870	24,743
Irrigation	414	322	308	1,922	4,713	8,614	12,982	13,984	11,558	8,031	1,719	840	65,407
2"													
Residential SF	963	260	680	550	613	1,210	1,703	2,533	3,210	2,450	1,687	630	16,490
Residential MF	10,187	10,694	9,899	11,196	12,200	20,561	22,593	20,322	19,732	15,615	12,704	12,281	177,984
Commercial	5,734	7,046	6,603	7,748	8,205	10,157	12,221	12,657	11,344	9,747	8,280	6,964	106,707
Institutional	6,145	10,434	9,260	8,995	19,053	15,680	16,262	14,952	9,444	10,082	10,929	8,452	139,689
Irrigation	640	377	506	8,343	11,538	20,023	22,624	23,745	19,845	15,143	7,106	2,996	132,884
3"													
Residential MF	14,005	15,605	13,263	11,863	15,288	23,425	21,040	19,945	21,543	22,723	21,983	19,908	220,588
Commercial	17,618	15,500	16,216	17,592	22,458	36,710	35,242	34,500	31,320	28,940	23,784	20,630	300,510
Institutional	3,518	8,547	7,499	7,241	8,906	12,434	10,264	9,852	9,912	8,154	6,711	5,177	98,214
Irrigation	6,910	1,200	1,400	2,735	41,146	36,502	62,480	85,750	49,291	62,530	7,330	580	357,854
4" and greater													
Residential MF	30,753	38,173	36,985	42,868	48,143	66,950	60,238	56,803	53,973	46,845	56,272	38,135	576,134
Commercial	13,250	10,500	9,750	19,000	38,000	35,250	57,750	53,000	55,500	41,500	30,250	23,250	387,000
Institutional	19,699	25,883	22,005	16,579	20,048	24,384	16,585	13,043	16,731	23,835	23,206	17,993	239,989
Irrigation	0	467	667	14,000	55,500	70,327	66,111	123,030	122,227	86,404	1,576	0	540,309

Source: City of Ashland and HEC.

use by size

Table A-18
City of Ashland Water Rate Study
Bill Tabulation for Rate Design - Residential - Winter

Potable Water Customer	Block Limit	Billing Units	Cumulative Bills through Block	Total Use of Bills Stopping in Block	Cumulative Use of Bills Stopping in Block	Total Use to This Block of Bills Passing Through Block	Cumulative Billed Usage	Percent Cumulative Billed Usage
Master Metered								
Zero Use		164	4,920	0	0	0	0	0%
Tier 1	300	2,072	4,756	407,866	407,866	805,200	1,213,066	65%
Tier 2	1,000	2,525	2,684	1,221,745	1,629,611	159,000	1,788,611	97%
Tier 3	2,500	152	159	200,941	1,830,552	17,500	1,848,052	100%
Tier 4	> 2,500	7	7	22,156	1,852,708	0	1,852,708	100%
Total		4,920		1,852,708				
Single Family								
Zero Use		1,660	56,630	0	0	0	0	0%
Tier 1	300	18,399	54,970	3,204,856	3,204,856	10,971,300	14,176,156	47%
Tier 2	1,000	30,748	36,571	16,592,584	19,797,440	5,823,000	25,620,440	86%
Tier 3	2,500	5,148	5,823	7,328,780	27,126,220	1,687,500	28,813,720	96%
Tier 4	> 2,500	675	675	2,740,988	29,867,208	0	29,867,208	100%
Total		56,630		29,867,208				

Source: City of Ashland and HEC.

smaller bill tab

Table A-19
City of Ashland Water Rate Study
Bill Tabulation for Rate Design - Residential - Summer

Potable Water Customer	Block Limit	Billing Units	Cumulative Bills through Block	Total Use of Bills Stopping in Block	Cumulative Use of Bills Stopping in Block	Total Use to This Block of Bills Passing Through Block	Cumulative Billed Usage	Percent Cumulative Billed Usage
Master Metered								
Zero Use		65	2,460	0	0	0	0	0%
Tier 1	300	481	2,395	97,968	97,968	574,200	672,168	41%
Tier 2	1,000	1,454	1,914	832,998	930,966	460,000	1,390,966	85%
Tier 3	2,500	428	460	584,380	1,515,346	80,000	1,595,346	98%
Tier 4	3,600	23	32	67,452	1,582,798	32,400	1,615,198	99%
Tier 5	> 3,600	9	9	47,668	1,630,466	0	1,630,466	100%
Total		2,460		1,630,466				
Single Family								
Zero Use		543	28,315	0	0	0	0	0%
Tier 1	300	4,704	27,772	794,582	794,582	6,920,400	7,714,982	24%
Tier 2	1,000	11,461	23,068	6,951,500	7,746,082	11,607,000	19,353,082	61%
Tier 3	2,500	8,941	11,607	14,060,337	21,806,419	6,665,000	28,471,419	89%
Tier 4	3,600	1,684	2,666	4,966,874	26,773,293	3,535,200	30,308,493	95%
Tier 5	> 3,600	982	982	5,185,537	31,958,830	0	31,958,830	100%
Total		28,315		31,958,830				

Source: City of Ashland and HEC.

res tab

Table A-20
City of Ashland Water Rate Study
Estimated Percent Water Billed by Residential by Tier

Potable Water					Cumulative Billed Usage					Percent Cumulative Billed Usage					Percent Use by Tier				
Customer Type	Block 1	Block 2	Block 3	Block 4	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5
Winter					Figure in Cubic Feet														
Master Metered	300	1,000	2,500		1,213,066	1,788,611	1,848,052	1,852,708		65%	97%	100%	100%		65%	31%	3%	0%	
Single Unit	300	1,000	2,500		14,176,156	25,620,440	28,813,720	29,867,208		47%	86%	96%	100%		47%	38%	11%	4%	
Total					15,389,222	27,409,051	30,661,772	31,719,916		49%	86%	97%	100%		49%	38%	10%	3%	
Summer																			
Master Metered	300	1,000	2,500	3,600	672,168	1,390,966	1,595,346	1,615,198	1,630,466	41%	85%	98%	99%	100%	41%	44%	13%	1%	1%
Single Unit	300	1,000	2,500	3,600	7,714,982	19,353,082	28,471,419	30,308,493	31,958,830	24%	61%	89%	95%	100%	24%	36%	29%	6%	5%
Total					8,387,150	20,744,048	30,066,765	31,923,691	33,589,296	25%	62%	90%	95%	100%	25%	37%	28%	6%	5%
Annual																			
Master Metered					1,885,234	3,179,577	3,443,398	3,467,906	3,483,174	54%	91%	99%	100%	100%	54%	37%	8%	1%	0%
Single Unit					21,891,138	44,973,522	57,285,139	60,175,701	61,826,038	35%	73%	93%	97%	100%	35%	37%	20%	5%	3%
Total					23,776,372	48,153,099	60,728,537	63,643,607	65,309,212	36%	74%	93%	97%	100%	36%	37%	19%	4%	3%

percent block

Source: HEC.

Source: HEC.

percent block

Table A-21
City of Ashland Water Rate Study
Bill Tabulation for Rate Design - Non-Residential Current

Potable Water Customer	Block Limit	Billing Units	Cumulative Bills through Block	Total Use of Bills Stopping in Block	Cumulative Use of Bills Stopping in Block	Total Use to This Block of Bills Passing Through Block	Cumulative Billed Usage	Percent Cumulative Billed Usage
Irrigation	0	0	0	0	0	0	0	0%
Zero Use	0	1,700	4,080	0	0	0	0	0%
Tier 1	50,000	2,327	2,380	10,314,213	10,314,213	2,650,000	12,964,213	88%
Tier 2 >	50,000	53	53	4,422,250	14,736,463	0	14,736,463	100%
Total		4,080		14,736,463				
Commercial								
Zero Use	0	519	7,306	0	0	0	0	0%
Tier 1	50,000	6,774	6,787	16,932,837	16,932,837	650,000	17,582,837	99%
Tier 2 >	50,000	13	13	781,010	17,713,847	0	17,713,847	100%
Total		7,306		17,713,847				
Institutional								
Zero Use	0	121	1,032	0	0	0	0	0%
Tier 1	50,000	887	911	13,388	13,388	1,200,000	1,213,388	40%
Tier 2 >	50,000	24	24	3,012,632	3,026,020	0	3,026,020	100%
Total		1,032		3,026,020				

Source: City of Ashland and HEC.

nonres bill tab

Table A-22
City of Ashland Water Rate Study
Bill Tabulation for Rate Design - Commercial Proposed

Potable Water Customer	Block Limit	Billing Units	Cumulative Bills through Block	Total Use of Bills Stopping in Block	Cumulative Use of Bills Stopping in Block	Total Use to This Block of Bills Passing Through Block	Cumulative Billed Usage	Percent Cumulative Billed Usage
Commercial <2"								
Zero Use		460	6,586	0	0	0	0	0%
Tier 1	2,500	4,851	6,126	3,074,096	3,074,096	3,187,500	6,261,596	61%
Tier 2	> 2,500	1,275	1,275	7,209,273	10,283,369	0	10,283,369	100%
		6,586		10,283,369				
Commercial 2+"								
Zero Use		59	720	0	0	0	0	0%
Tier 1	15,000	472	661	1,989,468	1,989,468	2,835,000	4,824,468	65%
Tier 2	> 15,000	189	189	5,441,010	7,430,478	0	7,430,478	100%
		720		7,430,478				

Source: City of Ashland and HEC.

comm tab

Table A-23

City of Ashland Water Rate Study

Estimated Percent Water Billed by Non-Residential by Tier

Potable Water Customer Type	Block 1	Cumulative Billed Usage		Percent Cumulative Billed Usage		Percent Use by Tier	
		Tier 1	Tier 2	Tier 1	Tier 2	Tier 1	Tier 2
	<i>per meter</i>	<u>Figure in Cubic Feet</u>					
Commercial	50,000	17,582,837	17,713,847	99%	100%	99%	1%
Institutional	50,000	1,213,388	3,026,020	40%	100%	40%	60%
Irrigation	50,000	12,964,213	14,736,463	88%	100%	88%	12%

Source: HEC.

Table A-24

City of Ashland Water Rate Study

Estimated Percent Water Billed by Proposed Commercial by Tier

Potable Water Customer Type	Block 1	Cumulative Billed Usage		Percent Cumulative Billed Usage		Percent Use by Tier	
		Tier 1	Tier 2	Tier 1	Tier 2	Tier 1	Tier 2
	<i>per meter</i>	<u>Figure in Cubic Feet</u>					
Commercial <2"	2,500	6,261,596	10,283,369	61%	100%	61%	39%
Commercial 2+"	15,000	4,824,468	7,430,478	65%	100%	65%	35%

Source: HEC.

new com block

Table A-25
City of Ashland Water Rate Study
Historical Potable Water Use by Customer Category

Potable Water Customer	Calendar Year				Average		% of Average
	2010	2011	2012	2013	2014	2010-2014	
	Figures in Cubic Feet						Of Billable
Residential							
Single Family	63,405,528	63,352,392	68,180,377	70,350,997	62,048,584	65,467,576	52%
Multi-Family	19,189,790	19,088,252	20,975,821	20,914,108	20,299,186	20,093,431	16%
Subtotal Residential	82,595,318	82,440,644	89,156,198	91,265,105	82,347,770	85,561,007	68%
Non-Residential							
Commercial <2" meter	9,745,579	10,280,935	10,542,620	10,727,829	10,276,017	10,314,596	8%
Commercial 2"+ meter	7,574,577	7,605,973	7,760,214	7,643,038	7,446,478	7,606,056	6%
Institutional	5,833,489	6,101,302	6,386,428	6,687,351	6,197,355	6,241,185	5%
Subtotal Non-Residential	23,153,645	23,988,210	24,689,262	25,058,218	23,919,850	24,161,837	19%
Irrigation	13,024,294	13,867,288	17,633,025	17,566,099	14,792,917	15,376,725	12%
Total Billable	118,773,257	120,296,142	131,478,485	133,889,422	121,060,537	125,099,569	
Tracking (non-billable)	220,441	205,237	253,626	260,858	1,254,006	438,834	
Total Demand	118,993,698	120,501,379	131,732,111	134,150,280	122,314,543	125,538,402	

Source: City of Ashland.

USE

Table A-26

City of Ashland Water Rate Study

Assumptions for the Effect of Increasing Prices on Water Demand (Price Elasticity)

Customer Type	Estimated Elasticity	2016-17 1	2017-18 2	2018-19 3	2019-20 4	2020-21 5	2021-22 6
% Change in Price to Meet Rev. Requirement		8.47%	4.49%	3.44%	3.46%	3.40%	3.49%
Assumption for Inflation [1]		2.25%	2.25%	2.25%	2.25%	2.25%	2.25%
Price Increase Adjusted for Inflation		6.22%	2.24%	1.19%	1.21%	1.15%	1.24%
Residential	[2]	[3]					
Single Family	-0.10	0.40%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%
Multi-Family	-0.10	0.40%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%
Non-Residential							
Commercial <2" meter	-0.15	1.80%	-0.9%	-0.2%	-0.2%	-0.2%	-0.2%
Commercial 2"+ meter	-0.15	1.80%	-0.9%	-0.2%	-0.2%	-0.2%	-0.2%
Institutional	-0.10	1.00%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%
Irrigation	-0.25	-3.75%	-0.6%	-0.3%	-0.3%	-0.3%	-0.3%

Source: HEC.

elasticity

[1] All Urban Consumers Price Index 1st half 2005 to 1st half 2015 average annual increase - <http://library.uoregon.edu/govdocs/cpi.html>.

[2] Based on HEC review of price elasticity of water literature.

[3] Due to cost redistribution (per the cost of service study), in the first year the actual price change will be different for each customer type.

This effect is applied to each customer group in the base year. Percentage changes by customer group are approximately:

Residential	-4%
Commercial	-12%
Institutional	-10%
Irrigation	15%

Table A-27

City of Ashland Water Rate Study

Projected Changes in Potable Water Demand due to Price Changes

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	Base	1	2	3	4	5	6
<i>Projected Growth</i>	[1]	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%
Residential							
Single Family	62,296,778	62,665,170	62,833,177	63,131,640	63,465,838	63,801,133	64,140,335
Multi-Family	20,380,383	20,500,902	20,564,731	20,665,616	20,776,726	20,888,244	21,000,965
Subtotal Residential	82,677,161	83,166,073	83,397,908	83,797,256	84,242,564	84,689,376	85,141,301
Non-Residential							
Commercial <2" meter	10,460,985	10,522,846	10,539,114	10,584,870	10,638,599	10,692,449	10,747,054
Commercial 2"+ meter	7,580,515	7,625,342	7,637,130	7,670,287	7,709,222	7,748,244	7,787,813
Institutional	6,259,329	6,296,343	6,319,342	6,351,569	6,386,376	6,421,326	6,456,618
Irrigation	14,238,183	14,322,380	14,205,431	14,217,453	14,263,145	14,308,327	14,355,738
Subtotal Non-Residential	38,539,011	38,766,912	38,701,017	38,824,180	38,997,342	39,170,345	39,347,223
Total Billable Water	121,216,172	121,932,984	122,098,926	122,621,436	123,239,906	123,859,721	124,488,524
Change in Demand Due to Price [2]							
Residential							
Single Family		-201,373	-72,671	-38,901	-39,775	-37,862	-40,995
Multi-Family		-57,066	-20,603	-11,030	-11,279	-10,737	-11,627
Subtotal Residential		-258,439	-93,274	-49,932	-51,054	-48,599	-52,623
Non-Residential							
Commercial <2" meter		-45,689	-16,470	-8,813	-9,009	-8,573	-9,281
Commercial 2"+ meter		-33,108	-11,935	-6,386	-6,528	-6,213	-6,725
Institutional		-14,151	-5,112	-2,737	-2,799	-2,665	-2,886
Irrigation		-200,459	-71,559	-38,157	-38,933	-36,982	-39,964
Subtotal Non-Residential		-293,407	-105,075	-56,093	-57,269	-54,434	-58,856
Total Billable Water		-551,846	-198,349	-106,025	-108,324	-103,033	-111,479

Source: HEC.

elas demand

[1] Base demand adjusted by cost of service cost reallocation per Table A-27.

[2] Change applied to summer months consumption only.

Table A-28

City of Ashland Water Rate Study
Comparison of Projected and Actual Production from 2012 Water Master Plan

Year	Population Estimates			Actual Billed	Projected Master Plan	COS [1]	Average Day Demands (MGD)						
	Certified	Comp. Plan					COS [1]	Water Master Plan Projections					
		187 / year								No Add'l Conserv.	5% Conserv.	10% Conserv.	15% Conserv.
Growth													
2000	19,610	19,110											
2001	19,770	19,297											
2002	20,130	19,484											
2003	20,430	19,671											
2004	20,590	19,858											
2005	20,880	20,045											
2006	21,430	20,232											
2007	21,630	20,419											
2008	21,485	20,606											
2009	21,505	20,793											
2010	20,095	20,980		2.43	3.07								
2011	20,255	21,167		2.47									
2012	20,325	21,354		2.69									
2013	20,295	21,541		2.74									
2014	20,340	21,728		2.48									
2015		21,915	20,393				2.48						
2016		22,102	20,446				2.48						
2017		22,289	20,500				2.49						
2018		22,476	20,554				2.50						
2019		22,663	20,607				2.51						
2020		22,850	20,661		3.29		2.52						
2021		23,037	20,715				2.54						
2022		23,224	20,769				2.55						
Change 2000-2014	730	2,618											
Avg. Annual % Inc.	0.26%	0.92%	0.59%										

Source: Portland State University Population Research Center, City of Ashland Comprehensive Plan, 2012 Water Master Plan (Carollo), and HEC.

[1] Cost of Service Water Rate Study.

mp comp

Table A-29
City of Ashland Water Rate Study
Allocation of Potable Water Customer Use Charges (Portion of Capacity and Commodity Costs)

Potable Water Customer Type		2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
		Base	1	2	3	4	5	6
Capacity Cost Share								
Total Cost Share	Table A-30	\$2,028,401	\$2,190,846	\$2,289,190	\$2,368,002	\$2,450,010	\$2,533,280	\$2,621,622
Residential	69%	\$1,404,825	\$1,517,330	\$1,585,441	\$1,640,025	\$1,696,822	\$1,754,493	\$1,815,676
Commercial < 2"	7%	\$136,059	\$146,956	\$153,552	\$158,839	\$164,340	\$169,925	\$175,851
Commercial 2" or larger	4%	\$77,469	\$83,673	\$87,429	\$90,439	\$93,571	\$96,752	\$100,126
Institutional	4%	\$82,774	\$89,403	\$93,416	\$96,632	\$99,979	\$103,377	\$106,982
Irrigation	16%	\$327,274	\$353,483	\$369,351	\$382,067	\$395,298	\$408,733	\$422,987
Total Capacity Costs	100%	\$2,028,401	\$2,190,846	\$2,289,190	\$2,368,002	\$2,450,010	\$2,533,280	\$2,621,622
Commodity Cost Share								
Total Cost Share	Table A-25	\$1,766,672	\$1,908,156	\$1,993,810	\$2,062,453	\$2,133,880	\$2,206,405	\$2,283,348
Residential	68%	\$1,208,303	\$1,305,070	\$1,363,653	\$1,410,601	\$1,459,453	\$1,509,056	\$1,561,680
Commercial < 2"	8%	\$145,664	\$157,330	\$164,392	\$170,052	\$175,941	\$181,920	\$188,265
Commercial 2" or larger	6%	\$107,414	\$116,016	\$121,224	\$125,397	\$129,740	\$134,149	\$138,828
Institutional	5%	\$88,139	\$95,197	\$99,471	\$102,895	\$106,459	\$110,077	\$113,916
Irrigation	12%	\$217,152	\$234,543	\$245,071	\$253,508	\$262,288	\$271,202	\$280,660
Total Commodity Costs	100%	\$1,766,672	\$1,908,156	\$1,993,810	\$2,062,453	\$2,133,880	\$2,206,405	\$2,283,348
Total Costs to be Recovered through Use Charges								
Residential	69%	\$2,613,129	\$2,822,401	\$2,949,094	\$3,050,626	\$3,156,275	\$3,263,548	\$3,377,356
Commercial < 2"	7%	\$281,723	\$304,285	\$317,944	\$328,890	\$340,280	\$351,846	\$364,115
Commercial 2" or larger	5%	\$184,883	\$199,689	\$208,653	\$215,837	\$223,311	\$230,901	\$238,953
Institutional	5%	\$170,913	\$184,600	\$192,887	\$199,528	\$206,438	\$213,454	\$220,898
Irrigation	14%	\$544,426	\$588,026	\$614,422	\$635,575	\$657,586	\$679,936	\$703,647
Total Use Charges	100%	\$3,795,073	\$4,099,001	\$4,283,000	\$4,430,455	\$4,583,890	\$4,739,685	\$4,904,969

Source: City of Ashland and HEC.

commodity

Table A-30
City of Ashland Water Rate Study
Calculation of Share of Maximum Day Water Use by Customer Category

Customer Type	Non-Coincident		MM/AM Ratio	MD Peak Ratio	Max Daily Use	% of Avg. Month	% of Peak Month	% of Max. Day
	Average Month Use (AM)	Maximum Month Use (MM)						
	<i>a</i>	<i>b</i>	<i>c = b/a</i>	<i>d (below)</i>	<i>e = d*(b/31)</i>	<i>f = a/total a</i>	<i>g = b/total b</i>	<i>h = e/total e</i>
Residential	cu. ft.	cu. ft.			cu. ft.			
Master Metered	1,233,889	1,807,603	1.46	2.22	129,200	12%	10%	10%
Single Unit	5,399,033	9,066,113	1.68	2.54	742,780	51%	53%	59%
Non-Residential								
Commercial < 2"	842,679	1,311,138	1.56	2.00	84,453	8%	8%	7%
Commercial 2" or larger	572,439	815,422	1.42	1.83	48,085	5%	5%	4%
Institutional	522,097	734,827	1.41	2.17	51,378	5%	4%	4%
Irrigation	2,093,565	3,461,986	1.65	1.82	203,140	20%	20%	16%
Total	10,689,965	17,248,262	1.61		1,259,036	100%	100%	101%

Calculation of MD Peak Factor	Master		Comm'l. < 2"	Comm'l. 2" +	Institutional	Irrigation
	Metered	Single Unit				
MM/AD Factor	1.46	1.68	1.56	1.42	1.41	1.65
System MD/MM Production Ratio [1]	1.10	1.10	1.10	1.10	1.10	1.10
Weekly Usage Adjustment	1.38	1.38	1.17	1.17	1.40	1.00
Calculated MD Peak Factor	2.22	2.54	2.00	1.83	2.17	1.82

Source: City of Ashland, AWWA M1 Manual, and HEC.

peaks

[1] Calculation:	2010	2011	2012	2013	2014	Average
Maximum Day (MG)	5.88	5.36	5.14	5.95	4.80	
Maximum Month (MG)	158.29	152.00	149.87	170.48	137.17	
Average MGD in the Max. Month (max. day / 31)	5.11	4.90	4.83	5.50	4.42	
Ratio of Max. Day to Avg. in Max. Month	1.15	1.09	1.06	1.08	1.08	1.10

Table A-31
City of Ashland Water Rate Study
Potable Water Irrigation Peak Cost Allocation Calculation

Month	Potable Water Only	
	All Water	Irrigation
	<i>cubic feet</i>	
January	5,698,647	25,023
February	5,903,155	19,250
March	5,395,848	34,123
April	6,737,313	352,456
May	9,004,008	1,158,194
June	13,874,124	2,148,917
July	16,364,166	2,862,767
August	16,915,748	3,451,333
September	14,895,165	2,740,545
October	12,225,379	2,146,283
November	7,481,362	458,953
December	7,819,658	43,004
Total	122,314,573	15,440,848
On Peak	62,049,203	11,203,562
Peak as % of Total	51%	73%

Source: City of Ashland.

irr peak

Table A32
City of Ashland Water Rate Study
Cost of Service Cost Allocation for the Base Year 2015-16

Customer Type	Customer		Service		New Charges										Grand Total		Share of Total										
	# Bills	Total	Meter Equiv.	\$ per Meter Equiv.	Tier 1	\$ per CF	Total	Tier 2	\$ per CF	Total	Use	\$ per CF	Total	Tier 3	\$ per CF	Total		Tier 4	\$ per CF	Total	Tier 5	\$ per CF	Total	Total Use	Total Bills	New TID Charges	Grand Total
POTABLE Residential	7,605	\$10.93	\$997,442	8,269	\$11.70	\$1,161,072	29,079,403	\$0.0230	\$688,207	30,736,386	\$0.0287	\$881,980	15,856,251	\$0.0387	\$614,243	3,675,585	\$0.0502	\$184,574	2,100,145	\$0.0646	\$135,593	82,347,770	\$2,504,596	\$4,663,111	71%		
Non-Residential Commercial	586	\$10.93	\$76,857	1,234	\$11.70	\$173,269	11,091,976	\$0.0287	\$318,284	6,650,519	\$0.0387	\$256,855			\$0			\$0		\$0		\$0	17,724,495	\$575,138	\$825,265	13%	
Institutional	122	\$10.93	\$16,001	617	\$11.70	\$86,635	6,197,355	\$0.0276	\$170,913			\$0			\$0			\$0		\$0		\$0	6,197,355	\$70,913	\$273,348	4%	
Fire Guards	117	\$10.93	\$15,345	117	\$11.70	\$16,428			\$0			\$0			\$0			\$0		\$0		\$0	0	\$21,774	\$0	\$21,774	0%
Irrigation	550	\$10.93	\$72,136	947	\$11.70	\$132,971	4,050,831	\$0.0292	\$118,338	10,742,086	\$0.0397	\$426,881			\$0			\$0		\$0		\$0	14,792,917	\$540,426	\$749,532	11%	
Subtotal Potable	8,880		\$1,177,781	11,184		\$1,570,375	51,319,565	\$0	\$1,295,742	48,108,991		\$1,564,922	15,856,251		\$614,243	3,675,585		\$184,574	2,100,145		\$135,593	121,060,537	\$3,795,073	\$0	\$5,543,230	99%	
NON-POTABLE (TID)																											
Metered																									\$17,554	\$17,554	0%
Unmetered																									\$35,316	\$35,316	1%
Subtotal Non-Potable																									\$52,870	\$52,870	1%
Total FY 2015-16	8,880		\$1,177,781	11,184		\$1,570,375																			\$5,596,100	\$5,596,100	100%

Source: HEC.
[1] Does not apply to TID customers.
rev 01/18

Table A-33

City of Ashland Water Rate Study
 Bill Impact for Single Family Residential

Fiscal Year 2016-17

Residential 3/4" Off-Peak

Monthly Water Use (Cu. Ft.)	Current (2015)				New Structure				Monthly Bill		
	Service Charge		Customer Charge		Service Charge		Customer Charge		Total Bill	Increase	
	Tier 1	Tier 2	Tier 3	Tier 4	Total Bill	Tier 1	Tier 2	Tier 3	Tier 4	Total Bill	Increase
Block Threshold (Cu. Ft.)	\$0.0243	\$0.0299	\$0.0400	\$0.0517		\$0.0246	\$0.0307	\$0.0415	\$0.0537		
	300	1,000	2,500			300	1,000	2,500			
Zero					\$23.50	\$11.74		\$13.75		\$25.48	\$1.98
200	\$4.86				\$28.36	\$11.74		\$13.75		\$30.39	\$2.03
400	\$7.29	\$2.99	winter average		\$33.78	\$11.74		\$13.75	\$3.07	\$35.92	\$2.14
600	\$7.29	\$8.97			\$39.76	\$11.74		\$13.75	\$9.21	\$42.06	\$2.30
800	\$7.29	\$14.95			\$45.74	\$11.74		\$13.75	\$15.36	\$48.21	\$2.47
1,000	\$7.29	\$20.93	summer average		\$51.72	\$11.74		\$13.75	\$21.50	\$54.35	\$2.63
1,200	\$7.29	\$20.93	\$8.00		\$59.72	\$11.74		\$13.75	\$21.50	\$62.64	\$2.92
1,400	\$7.29	\$20.93	\$16.00		\$67.72	\$11.74		\$13.75	\$21.50	\$70.93	\$3.21
1,600	\$7.29	\$20.93	\$24.00		\$75.72	\$11.74		\$13.75	\$21.50	\$79.23	\$3.51
1,800	\$7.29	\$20.93	\$32.00		\$83.72	\$11.74		\$13.75	\$21.50	\$87.52	\$3.80
2,000	\$7.29	\$20.93	\$40.00		\$91.72	\$11.74		\$13.75	\$21.50	\$95.81	\$4.09
2,200	\$7.29	\$20.93	\$48.00		\$99.72	\$11.74		\$13.75	\$21.50	\$104.10	\$4.38
2,400	\$7.29	\$20.93	\$56.00		\$107.72	\$11.74		\$13.75	\$21.50	\$112.39	\$4.67
2,600	\$7.29	\$20.93	\$60.00	\$5.17	\$116.89	\$11.74		\$13.75	\$21.50	\$121.91	\$5.02
2,800	\$7.29	\$20.93	\$60.00	\$15.51	\$127.23	\$11.74		\$13.75	\$21.50	\$132.66	\$5.43
3,000	\$7.29	\$20.93	\$60.00	\$25.85	\$137.57	\$11.74		\$13.75	\$21.50	\$143.41	\$5.84

Source: HEC.

impact res

Table A-34

City of Ashland Water Rate Study

Bill Impact for 3/4" Commercial Customer

Fiscal Year 2016-17

Commercial 3/4"

Monthly	Current (2015)			New Structure			Monthly Bill
	Service Charge	Tier 1	Tier 2	Total Bill	Customer Charge	Service Charge	Total Bill
		\$0.0343	\$0.0353				
<i>Block Threshold (Cu. Ft.)</i>		50,000					
Zero	\$23.50			\$23.50	\$11.74	\$13.75	\$25.48
200	\$23.50	\$6.86		\$30.36	\$11.74	\$13.75	\$31.62
400	\$23.50	\$13.72		\$37.22	\$11.74	\$13.75	\$37.77
600	\$23.50	\$20.58		\$44.08	\$11.74	\$13.75	\$43.91
800	\$23.50	\$27.44		\$50.94	\$11.74	\$13.75	\$50.05
1000	\$23.50	\$34.30	winter avg.	\$57.80	\$11.74	\$13.75	\$56.19
1200	\$23.50	\$41.16		\$64.66	\$11.74	\$13.75	\$62.33
1400	\$23.50	\$48.02		\$71.52	\$11.74	\$13.75	\$68.48
1600	\$23.50	\$54.88		\$78.38	\$11.74	\$13.75	\$74.62
1800	\$23.50	\$61.74		\$85.24	\$11.74	\$13.75	\$80.76
2000	\$23.50	\$68.60		\$92.10	\$11.74	\$13.75	\$86.90
2200	\$23.50	\$75.46	summer avg.	\$98.96	\$11.74	\$13.75	\$93.05
2400	\$23.50	\$82.32		\$105.82	\$11.74	\$13.75	\$99.19
2600	\$23.50	\$89.18		\$112.68	\$11.74	\$13.75	\$106.40
2800	\$23.50	\$96.04		\$119.54	\$11.74	\$13.75	\$114.70
3000	\$23.50	\$102.90		\$126.40	\$11.74	\$13.75	\$122.99

Source: HEC.

impact com3/4

Table A-35

City of Ashland Water Rate Study

Bill Impact for 1" Commercial Customer

Fiscal Year 2016-17

Commercial 1"

Monthly		Current (2015)			New Structure			Monthly Bill
Water Use (Cu. Ft.)	Service Charge	Tier 1	Tier 2	Total Bill	Customer		Service Charge	Increase (Decrease)
					Charge	Charge		
<i>Block Threshold (Cu. Ft.)</i>								
		\$0.0343	\$0.0353				\$0.0307	\$0.0415
		<i>50,000</i>					<i>2,500</i>	
Zero	\$46.99			\$46.99	\$11.74	\$14.34		\$26.07 (\$20.92)
400	\$46.99	\$13.72		\$60.71	\$11.74	\$14.34	\$12.28	\$38.36 (\$22.35)
800	\$46.99	\$27.44	winter avg.	\$74.43	\$11.74	\$14.34	\$24.57	\$50.64 (\$23.79)
1200	\$46.99	\$41.16		\$88.15	\$11.74	\$14.34	\$36.85	\$62.92 (\$25.23)
1600	\$46.99	\$54.88		\$101.87	\$11.74	\$14.34	\$49.14	\$75.21 (\$26.66)
2000	\$46.99	\$68.60	summer avg.	\$115.59	\$11.74	\$14.34	\$61.42	\$87.49 (\$28.10)
2400	\$46.99	\$82.32		\$129.31	\$11.74	\$14.34	\$73.71	\$99.78 (\$29.53)
2800	\$46.99	\$96.04		\$143.03	\$11.74	\$14.34	\$76.78	\$115.29 (\$27.74)
3200	\$46.99	\$109.76		\$156.75	\$11.74	\$14.34	\$76.78	\$131.87 (\$24.88)
3600	\$46.99	\$123.48		\$170.47	\$11.74	\$14.34	\$76.78	\$148.45 (\$22.02)
4000	\$46.99	\$137.20		\$184.19	\$11.74	\$14.34	\$76.78	\$165.04 (\$19.15)
4400	\$46.99	\$150.92		\$197.91	\$11.74	\$14.34	\$76.78	\$181.62 (\$16.29)
4800	\$46.99	\$164.64		\$211.63	\$11.74	\$14.34	\$76.78	\$198.21 (\$13.42)
5200	\$46.99	\$178.36		\$225.35	\$11.74	\$14.34	\$76.78	\$214.79 (\$10.56)
5600	\$46.99	\$192.08		\$239.07	\$11.74	\$14.34	\$76.78	\$231.37 (\$7.70)
6000	\$46.99	\$205.80		\$252.79	\$11.74	\$14.34	\$76.78	\$247.96 (\$4.83)

Source: HEC.

Impact com1

Table A-36

City of Ashland Water Rate Study

Bill Impact for 2" Commercial Customer

Fiscal Year 2016-17

Commercial 2"

Monthly Water Use (Cu. Ft.)	Current (2015)			New Structure			Monthly Bill Increase (Decrease)			
	Service Charge	Tier 1	Tier 2	Total Bill	Customer Charge	Service Charge		Tier 1	Tier 2	Total Bill
<i>Block Threshold (Cu. Ft.)</i>										
		\$0.0343	\$0.0353				\$0.0307	\$0.0415		
		50,000					15,000			
Zero	\$88.24			\$88.24	\$11.74	\$104.27			\$116.01	\$27.77
1200	\$88.24	\$41.16		\$129.40	\$11.74	\$104.27	\$36.85		\$152.86	\$23.46
2400	\$88.24	\$82.32		\$170.56	\$11.74	\$104.27	\$73.71		\$189.71	\$19.15
3600	\$88.24	\$123.48		\$211.72	\$11.74	\$104.27	\$110.56		\$226.57	\$14.85
4800	\$88.24	\$164.64		\$252.88	\$11.74	\$104.27	\$147.41		\$263.42	\$10.54
6000	\$88.24	\$205.80		\$294.04	\$11.74	\$104.27	\$184.27		\$300.27	\$6.23
7200	\$88.24	\$246.96		\$335.20	\$11.74	\$104.27	\$221.12		\$337.12	\$1.92
8400	\$88.24	\$288.12	winter avg.	\$376.36	\$11.74	\$104.27	\$257.97		\$373.98	(\$2.38)
9600	\$88.24	\$329.28		\$417.52	\$11.74	\$104.27	\$294.83		\$410.83	(\$6.69)
10800	\$88.24	\$370.44		\$458.68	\$11.74	\$104.27	\$331.68		\$447.68	(\$11.00)
12000	\$88.24	\$411.60		\$499.84	\$11.74	\$104.27	\$368.53		\$484.54	(\$15.30)
13200	\$88.24	\$452.76		\$541.00	\$11.74	\$104.27	\$405.38		\$521.39	(\$19.61)
14400	\$88.24	\$493.92	summer avg.	\$582.16	\$11.74	\$104.27	\$442.24		\$558.24	(\$23.92)
15600	\$88.24	\$535.08		\$623.32	\$11.74	\$104.27	\$460.66	\$24.88	\$601.55	(\$21.77)
16800	\$88.24	\$576.24		\$664.48	\$11.74	\$104.27	\$460.66	\$74.63	\$651.30	(\$13.18)
18000	\$88.24	\$617.40		\$705.64	\$11.74	\$104.27	\$460.66	\$124.38	\$701.05	(\$4.59)

Source: HEC.

impact com2

Table A-37

City of Ashland Water Rate Study

Bill Impact for 4" Commercial Customer

Fiscal Year 2016-17

Commercial 4"

Monthly Water Use (Cu. Ft.)	Current (2015)			New Structure				Monthly Bill Increase (Decrease)	
	Service Charge	Tier 1	Tier 2	Total Bill	Customer Charge	Service Charge	Tier 1		Tier 2
Block Threshold (Cu. Ft.)									
Zero	\$282.07	\$0.0343	\$0.0353				\$0.0307	\$0.0415	
2000	\$282.07	50,000				15,000			
4000	\$282.07	\$68.60		\$282.07	\$11.74	\$331.60	\$61.42		\$343.34
6000	\$282.07	\$137.20		\$350.67	\$11.74	\$331.60	\$122.84		\$404.76
8000	\$282.07	\$205.80		\$419.27	\$11.74	\$331.60	\$184.27		\$466.18
10000	\$282.07	\$274.40	winter avg.	\$487.87	\$11.74	\$331.60	\$245.69		\$527.61
12000	\$282.07	\$343.00		\$556.47	\$11.74	\$331.60			\$589.03
14000	\$282.07	\$411.60		\$625.07	\$11.74	\$331.60	\$307.11		\$650.45
16000	\$282.07	\$480.20	summer avg.	\$693.67	\$11.74	\$331.60	\$368.53		\$711.87
18000	\$282.07	\$548.80		\$762.27	\$11.74	\$331.60	\$429.95		\$773.29
20000	\$282.07	\$617.40		\$830.87	\$11.74	\$331.60	\$460.66	\$41.46	\$845.46
22000	\$282.07	\$686.00		\$899.47	\$11.74	\$331.60	\$460.66	\$124.38	\$928.38
24000	\$282.07	\$754.60		\$968.07	\$11.74	\$331.60	\$460.66	\$207.30	\$1,011.30
26000	\$282.07	\$823.20		\$1,036.67	\$11.74	\$331.60	\$460.66	\$290.22	\$1,094.22
28000	\$282.07	\$891.80		\$1,105.27	\$11.74	\$331.60	\$460.66	\$373.14	\$1,177.14
30000	\$282.07	\$960.40		\$1,173.87	\$11.74	\$331.60	\$460.66	\$456.06	\$1,260.06
	\$282.07	\$1,029.00		\$1,242.47	\$11.74	\$331.60	\$460.66	\$538.98	\$1,342.98
	\$282.07			\$1,311.07	\$11.74	\$331.60	\$460.66	\$621.90	\$1,425.90
									\$100.51
									\$86.19
									\$71.87
									\$57.55
									\$43.23
									\$28.91
									\$14.59

Source: HEC.

impact com4

Table A-38

City of Ashland Water Rate Study

Bill Impact for 2" Institutional Customer

Fiscal Year 2016-17

Institutional 2"

Monthly Water Use (Cu. Ft.)	Current (2015)			New Structure			Monthly Bill Increase (Decrease)	
	Service Charge	Tier 1	Tier 2	Total Bill	Customer Charge	Service Charge		Tier 1
<i>Block Threshold (Cu. Ft.)</i>								
Zero	\$88.24	\$0.0343	\$0.0353				\$0.0294	
1500	\$88.24	50,000		\$88.24	\$11.74	\$104.27	<i>n.a.</i>	\$116.01
3000	\$88.24	\$51.45		\$139.69	\$11.74	\$104.27	\$44.08	\$160.08
4500	\$88.24	\$102.90		\$191.14	\$11.74	\$104.27	\$88.15	\$204.16
6000	\$88.24	\$154.35	winter avg.	\$242.59	\$11.74	\$104.27	\$132.23	\$248.24
7500	\$88.24	\$205.80	summer avg.	\$294.04	\$11.74	\$104.27	\$176.31	\$292.31
9000	\$88.24	\$257.25		\$345.49	\$11.74	\$104.27	\$220.39	\$336.39
10500	\$88.24	\$308.70		\$396.94	\$11.74	\$104.27	\$264.46	\$380.47
12000	\$88.24	\$360.15		\$448.39	\$11.74	\$104.27	\$308.54	\$424.55
13500	\$88.24	\$411.60		\$499.84	\$11.74	\$104.27	\$352.62	\$468.62
15000	\$88.24	\$463.05		\$551.29	\$11.74	\$104.27	\$396.69	\$512.70
16500	\$88.24	\$514.50		\$602.74	\$11.74	\$104.27	\$440.77	\$556.78
18000	\$88.24	\$565.95		\$654.19	\$11.74	\$104.27	\$484.85	\$600.85
19500	\$88.24	\$617.40		\$705.64	\$11.74	\$104.27	\$528.92	\$644.93
21000	\$88.24	\$668.85		\$757.09	\$11.74	\$104.27	\$573.00	\$689.01
22500	\$88.24	\$720.30		\$808.54	\$11.74	\$104.27	\$617.08	\$733.08
	\$88.24	\$771.75		\$859.99	\$11.74	\$104.27	\$661.16	\$777.16

Source: HEC.

impact inst2

Table A-39

City of Ashland Water Rate Study

Bill Impact for 4" Institutional Customer

Fiscal Year 2016-17

Institutional 4"

Monthly Water Use (Cu. Ft.)	Current (2015)			New Structure			Monthly Bill Increase (Decrease)
	Service Charge	Tier 1	Tier 2	Customer Charge	Service Charge	Tier 1	
		\$0.0343	\$0.0353			\$0.0294	
<i>Block Threshold (Cu. Ft.)</i>						<i>n.a.</i>	
Zero	\$282.07	50,000					
2500	\$282.07	\$85.75		\$11.74	\$331.60	\$73.46	\$343.34 \$61.27
5000	\$282.07	\$171.50	winter avg.	\$11.74	\$331.60	\$146.92	\$416.80 \$48.98
7500	\$282.07	\$257.25	summer avg.	\$11.74	\$331.60	\$220.39	\$490.26 \$36.69
10000	\$282.07	\$343.00		\$11.74	\$331.60	\$293.85	\$563.73 \$24.41
12500	\$282.07	\$428.75		\$11.74	\$331.60	\$367.31	\$637.19 \$12.12
15000	\$282.07	\$514.50		\$11.74	\$331.60	\$440.77	\$710.65 (\$0.17)
17500	\$282.07	\$600.25		\$11.74	\$331.60	\$514.23	\$784.11 (\$12.46)
20000	\$282.07	\$686.00		\$11.74	\$331.60	\$587.69	\$857.57 (\$24.75)
22500	\$282.07	\$771.75		\$11.74	\$331.60	\$661.16	\$931.03 (\$37.04)
25000	\$282.07	\$857.50		\$11.74	\$331.60	\$734.62	\$1,004.50 (\$49.32)
27500	\$282.07	\$943.25		\$11.74	\$331.60	\$808.08	\$1,077.96 (\$61.61)
30000	\$282.07	\$1,029.00		\$11.74	\$331.60	\$881.54	\$1,151.42 (\$73.90)
32500	\$282.07	\$1,114.75		\$11.74	\$331.60	\$955.00	\$1,224.88 (\$86.19)
35000	\$282.07	\$1,200.50		\$11.74	\$331.60	\$1,028.46	\$1,298.34 (\$98.48)
37500	\$282.07	\$1,286.25		\$11.74	\$331.60	\$1,101.93	\$1,371.80 (\$110.77)
							\$1,445.27 (\$123.05)

Source: HEC.

impact inst4

Table A-40

City of Ashland Water Rate Study

Bill Impact for Potable Water Irrigation Customer On Peak Fiscal Year 2016-17 Irrigation On-Peak 3/4"

Monthly Water Use (Cu. Ft.)	Current (2015)				New Structure			Monthly Bill Increase (Decrease)
	Service Charge	Tier 1	Tier 2	Total Bill	Customer Charge	Service Charge	Tier 1	Total Bill
		\$0.0343	\$0.0353				\$0.0449	
<i>Block Threshold (Cu. Ft.)</i>		<i>50,000</i>					<i>n.a.</i>	
Zero	\$23.50			\$23.50	\$11.74	\$13.75		\$25.48
800	\$23.50	\$27.44		\$50.94	\$11.74	\$13.75	\$35.90	\$61.38
1600	\$23.50	\$54.88		\$78.38	\$11.74	\$13.75	\$71.80	\$97.28
2400	\$23.50	\$82.32		\$105.82	\$11.74	\$13.75	\$107.71	\$133.19
3200	\$23.50	\$109.76		\$133.26	\$11.74	\$13.75	\$143.61	\$169.09
4000	\$23.50	\$137.20		\$160.70	\$11.74	\$13.75	\$179.51	\$204.99
4800	\$23.50	\$164.64		\$188.14	\$11.74	\$13.75	\$215.41	\$240.89
5600	\$23.50	\$192.08		\$215.58	\$11.74	\$13.75	\$251.31	\$276.79
6400	\$23.50	\$219.52		\$243.02	\$11.74	\$13.75	\$287.22	\$312.70
7200	\$23.50	\$246.96		\$270.46	\$11.74	\$13.75	\$323.12	\$348.60
8000	\$23.50	\$274.40		\$297.90	\$11.74	\$13.75	\$359.02	\$384.50
8800	\$23.50	\$301.84	<i>summer avg.</i>	\$325.34	\$11.74	\$13.75	\$394.92	\$420.40
9600	\$23.50	\$329.28		\$352.78	\$11.74	\$13.75	\$430.82	\$456.30
10400	\$23.50	\$356.72		\$380.22	\$11.74	\$13.75	\$466.73	\$492.21
11200	\$23.50	\$384.16		\$407.66	\$11.74	\$13.75	\$502.63	\$528.11
12000	\$23.50	\$411.60		\$435.10	\$11.74	\$13.75	\$538.53	\$564.01

Source: HEC.

impact irr on

Table A-41

City of Ashland Water Rate Study

Bill Impact for Potable Water Irrigation Customer Off Peak Fiscal Year 2016-17 Irrigation Off Peak 3/4"

Monthly Water Use (Cu. Ft.)	Current (2015)			New Structure			Monthly Bill Increase (Decrease)
	Service Charge	Tier 1	Tier 2	Customer Charge	Service Charge	Tier 1	Total Bill
<i>Block Threshold (Cu. Ft.)</i>							
Zero	\$0.00						
200	\$23.50	\$6.86		\$11.74	\$13.75		\$25.48
400	\$23.50	\$13.72		\$11.74	\$13.75	\$6.61	\$32.09
600	\$23.50	\$20.58	winter avg.	\$11.74	\$13.75	\$13.22	\$38.70
800	\$23.50	\$27.44		\$11.74	\$13.75	\$19.83	\$45.31
1000	\$23.50	\$34.30		\$11.74	\$13.75	\$26.44	\$51.92
1200	\$23.50	\$41.16		\$11.74	\$13.75	\$33.05	\$58.53
1400	\$23.50	\$48.02		\$11.74	\$13.75	\$39.66	\$65.14
1600	\$23.50	\$54.88		\$11.74	\$13.75	\$46.27	\$71.75
1800	\$23.50	\$61.74		\$11.74	\$13.75	\$52.88	\$78.36
2000	\$23.50	\$68.60		\$11.74	\$13.75	\$59.49	\$84.97
2200	\$23.50	\$75.46		\$11.74	\$13.75	\$66.10	\$91.59
2400	\$23.50	\$82.32		\$11.74	\$13.75	\$72.71	\$98.20
2600	\$23.50	\$89.18		\$11.74	\$13.75	\$79.32	\$104.81
2800	\$23.50	\$96.04		\$11.74	\$13.75	\$85.94	\$111.42
3000	\$23.50	\$102.90		\$11.74	\$13.75	\$92.55	\$118.03
						\$99.16	\$124.64

Source: HEC.

Impact irr off

RESOLUTION NO. 92-82

A RESOLUTION ADOPTING A SENIOR CITIZEN UTILITY DISCOUNT PURSUANT TO SECTIONS 14.04.030, 14.08.035 AND 14.16.030 OF THE ASHLAND MUNICIPAL CODE, AND REPEALING RESOLUTION NO. 92-18.

THE MAYOR AND CITY COUNCIL OF THE CITY OF ASHLAND DO RESOLVE AS FOLLOWS:

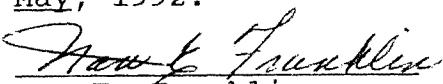
SECTION 1. Senior Citizen Utility Discount. If the applicant has met all of the requirements of the Ashland Municipal Code, the City shall, beginning with the next billing cycle after the date of the application, discount the total amount billed for water, sewer and electric service, not including connect fees, reconnect fees and similar charges. The amount of discount for the applicant's own residence shall be ~~twenty-five percent (25%)~~ thirty percent for water, and electric and sewer bills if the applicant's household income does not exceed the poverty guidelines of the Federal Community Services Administration, or ~~fifteen percent (15%)~~ twenty percent for water, and electric and sewer bills if the applicant's household income does not exceed one hundred twenty-five percent of the poverty guidelines of the Federal Community Services Administration. ~~In special hardship cases, a committee of two (2) Council members and the Senior Program Director, may grant exceptions to the foregoing income limitations where the circumstances justify such exceptions.~~

SECTION 2. The effective date of this resolution is July 1, 1992.

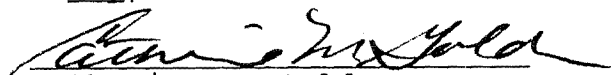
SECTION 3. Resolution No. 92-18 is repealed.

SECTION 4. Three (3) copies of this Resolution shall be maintained in the office of the City Recorder and shall be available for public inspection during regular business hours.

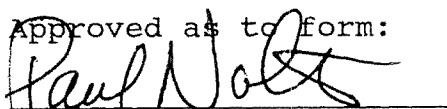
The foregoing Resolution was READ and DULY ADOPTED at a regular meeting of the City Council of the City of Ashland on the 5th day of May, 1992.


Nan E. Franklin
City Recorder

SIGNED and APPROVED this 6th day of May, 1992.

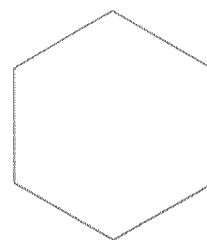

Catherine M. Golden
Mayor

Approved as to form:


Paul Nolte
City Attorney

(d:\council\resos92\senutil.dsc)

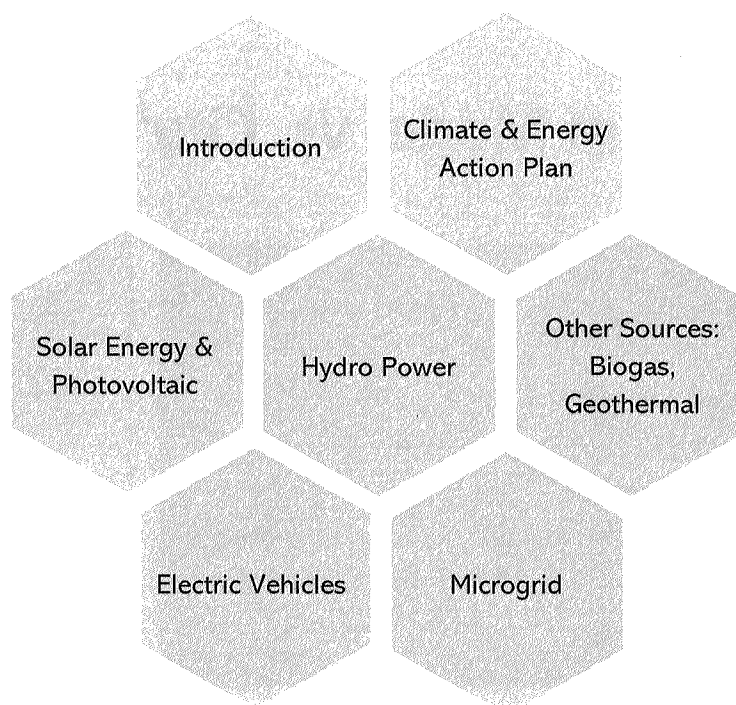
City of Ashland Electric System Planning Study Renewable Energy Discussion



Presented by:
Martin Stoddard, P.E.
Stoddard Power Systems, LLC



Agenda



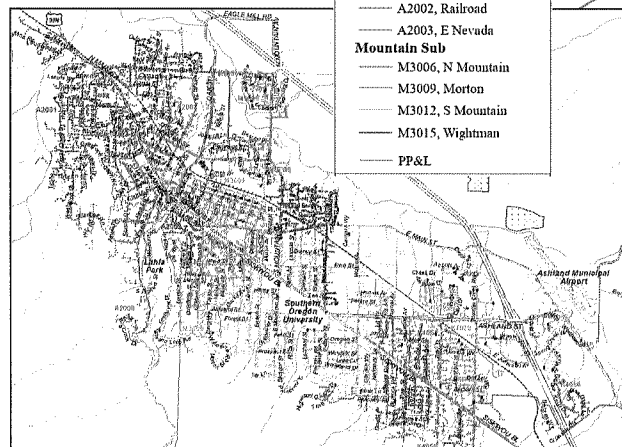
Introduction

Stoddard Power Systems, LLC, is a small, veteran-owned, Oregon-based, consulting firm with consulting engineers having many years of experience providing services to government, municipal utilities, PUD, cooperatives, etc.

Currently, SPS is performing a 10-year Electrical System Master Plan study.

- The overall project progress is about 40% completed.
- A new GIS-based electrical system model is being developed as part of this study.
- The typical study scope focuses on electrical forecast, analysis, and a system improvement plan. For this study we are also addressing:
 - Opportunities and barriers for adding renewable energy resources,
 - An assessment of the City's readiness to accommodate high adoption of Electric Vehicles (EVs) and fuel-switching (natural gas reduction)
 - Recommendations for integration of the City's Climate and Energy Action Plan (CEAP) and looking at impacts on electrical infrastructure.

System Model vs. City's Elec Map



Review of Existing Profile, 2013-2022

Summer Mean High Temperature

Year	Temperature (F)
2013	92.3
2014	92.2
2015	89.0
2016	91.1
2017	90.7
2018	91.4
2019	87.8
2020	90.1
2021	93.5
2022	92.2

Winter Mean Low Temperature

Year	Temperature (F)
2013	19.2
2014	26.7
2015	29.1
2016	26.5
2017	25.9
2018	26.7
2019	28.2
2020	26.5
2021	28.9
2022	24.4

City of Ashland Population

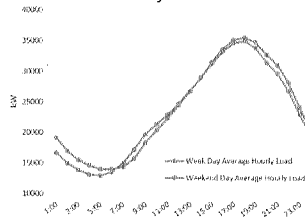
Year	Population	Percent change
2013	20,295	
2014	20,340	0.22%
2015	20,405	0.32%
2016	20,620	1.05%
2017	20,700	0.39%
2018	20,815	0.56%
2019	20,960	0.70%
2020	21,105	0.69%
2021	21,554	2.13%
2022	21,642	0.41%
10		0.72%

Peak Power and Total Energy

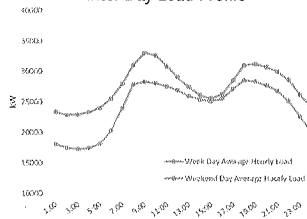
Year	Peak (kW)	Energy (kWh)
2013	40,650	19,636,870 (Note1)
2014	38,885	173,668,763
2015	38,940	173,668,763
2016	39,940	205,816,285
2017	38,505	178,273,030
2018	38,700	173,236,580
2019	37,605	172,884,771
2020	38,195	170,324,005
2021	45,920	175,664,178
2022	40,670	165,933,175

Note 1: Bad data ("0") for 11 months in 2013.

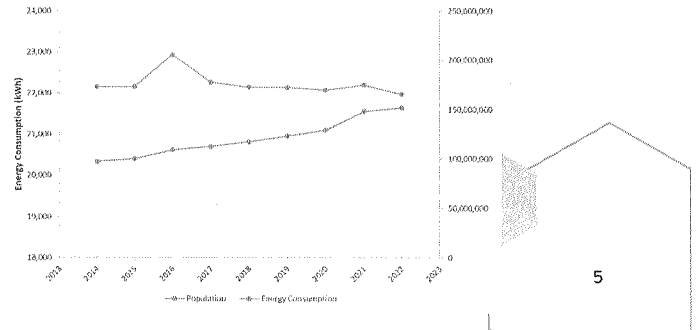
Summer Day Load Profile



Winter Day Load Profile

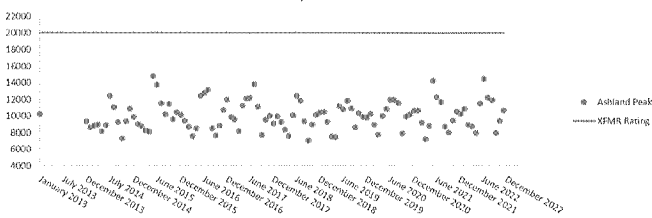


Renewable Energy Discussion

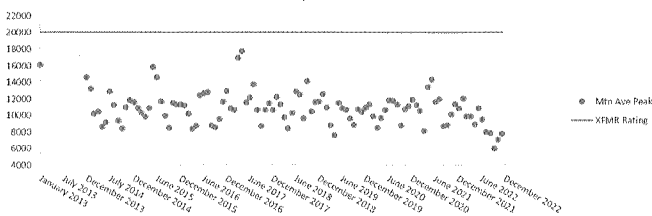


Review of Existing Profile, 2013-2022

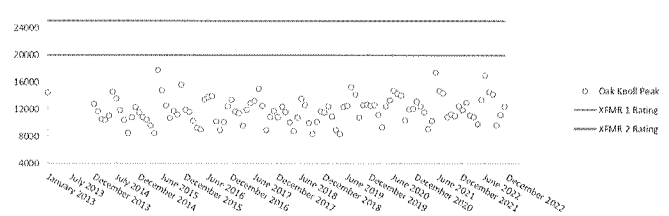
Ashland Substation Monthly Peak vs. Substation Transformer kVA



Mth Ave Substation Monthly Peak vs. Substation Transformer kVA



Oak Knoll Substation Monthly Peak vs. Substation Transformer kVA

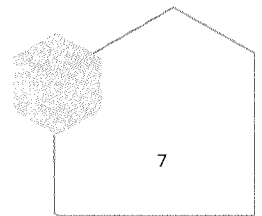


Renewable Energy Discussion

Climate & Energy Action Plan (CEAP)

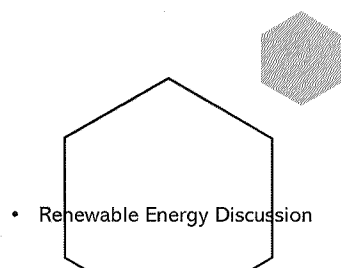
- Initiated in 2011, the City's CEAP vision is to reduce Greenhouse Gas emissions and improve the resilience to the environment, infrastructure, and people from future impacts of climate change.
- Goal:
 - Reduce overall Ashland community greenhouse gas emissions by 8% on average every year to 2050
 - Attain carbon neutrality in City operations by 2030, and reduce fossil fuel consumption by 50% by 2030 and 100% by 2050
 - Be ready for projected climate changes
- The focus of the electric department planning study is to attempt to prepare the electrical infrastructure for future demands and align system planning with the City's CEAP to the extent possible.

Renewable Energy Discussion



CEAP --- The City's path

- Transition to clean energy
 - Natural gas ban or Fuel switching policy
 - Increase renewable energy portfolio
 - Electric Vehicles
- Maximize water and energy efficiency and reuse
- Support climate-friendly land use and management
- Reduce consumption of carbon-intensive goods and services
- Inform and work with residents, organizations, and government
- Lead by example



The City's vision is a collaborative effort over a long period.

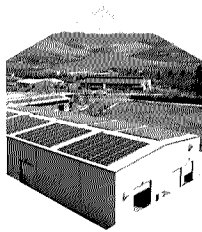
CEAP Goals - Transition to clean energy

- Ashland becomes the third Oregon city to commit to developing a policy to transition new homes off fossil fuels.
- Once passed, appliances for heating or cooking would have to be all-electric for new home construction.
- Depending on the amount and the timeline of new residential development, this policy could have a big impact on the City's electric systems.
- Ashland's electric grid capacity may need to be upgraded to support the additional loads that come from natural gas reduction and future growth in the number of electric vehicles.

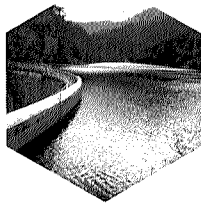
• Renewable Energy Discussion

9

CEAP Goal --- Transition to clean energy Renewable Energy Portfolio/Potentials



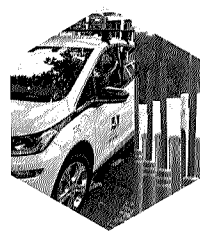
**Solar Energy &
Photovoltaic**



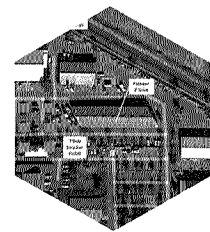
Hydro Power



**Other Sources:
Biomass, Biogas,
Geothermal**



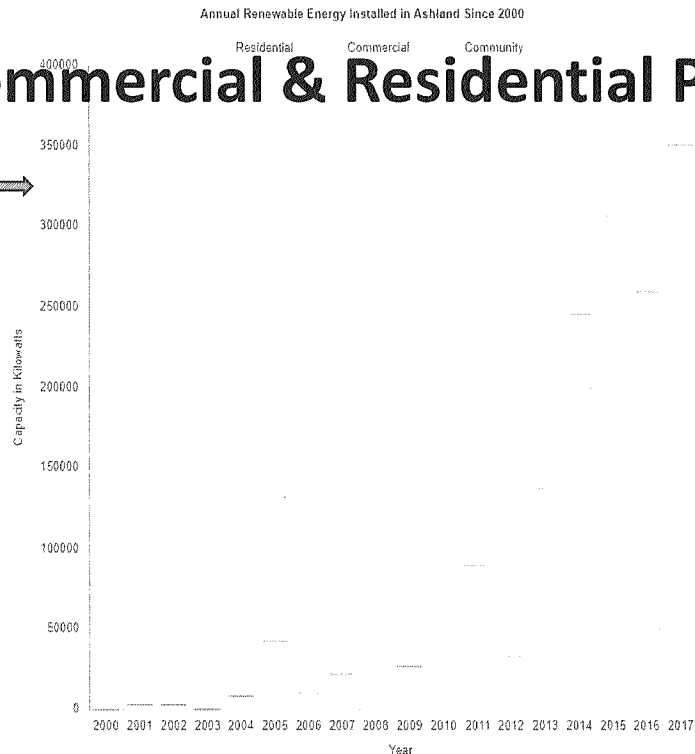
Electric Vehicles



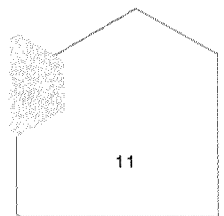
Microgrid

Solar Energy - Commercial & Residential PV

- Installed solar energy in Ashland since 2000.
- According to the latest information available:
 - Total installed commercial solar is about 1.28 MW,
 - Total installed residential solar is about 3.82 MW.
- Installed total is about 5.1 MW. The expected Summer peak output is about 3.8 to 4 MW assuming fixed axis stands, modern PV panel ratings, and Ashland's solar irradiance profile.

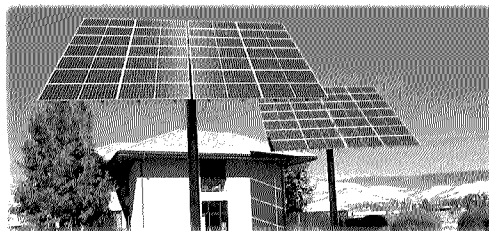


Renewable Energy Discussion

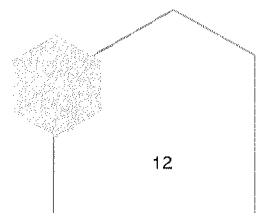


Solar Energy – Commercial & Residential PV

- For solar energy (or other renewables) ≤ 25 kW. No barriers or issues in general as long as they meet NEC and the City's metering and installation requirements.
- For solar energy (or other renewables) > 25 kW and ≤ 200 kW. Depends on the location and total installed capacity versus available capacity. This requires prior consultation and approval by the Electric Department and generally required engineering studies.
- Many potential renewable energy grants at Federal and State levels.



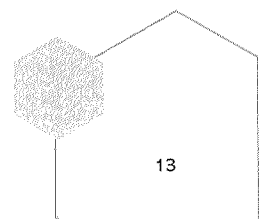
Renewable Energy Discussion



Solar Energy – “Large” PV Integration

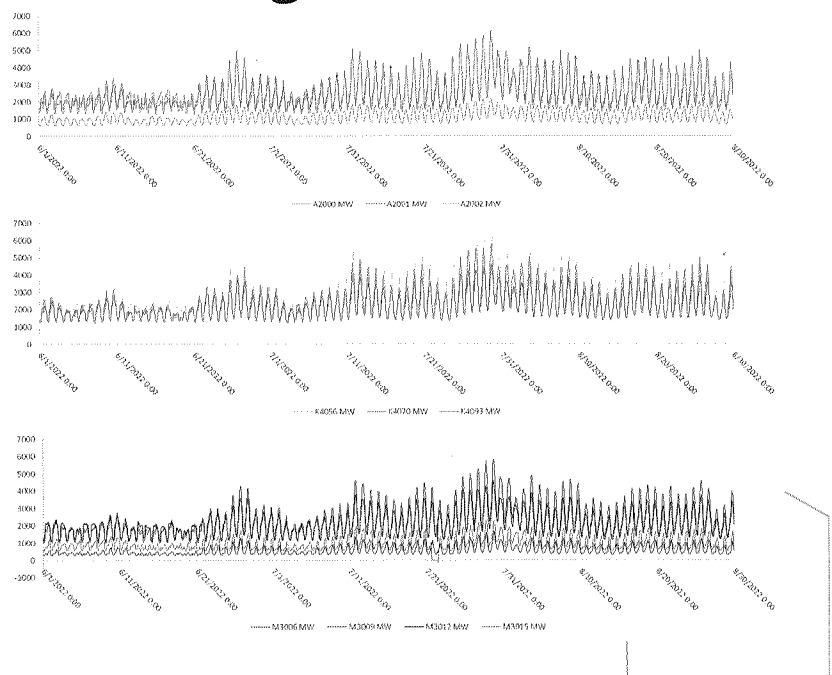
- ‘Large’ is relative to where the generation is connected. For distribution level connections, large is >200 kW.
- BPA’s standard classifies as small generation when a single or combined generating capacity is greater than 0.2 MW and equal to or less than 20 MW. This is primarily a function of transmission connection.
- Post-2028 BPA contracts under discussion with the City would allow the City to develop single combined generation of up to 5 MW. However, the City’s electric infrastructure is distribution only. The City has no transmission resource.
- This requires Feasibility, Impact, and Facility studies on the feeder levels and substation levels.

Renewable Energy Discussion



Solar Energy – “Large” PV Integration

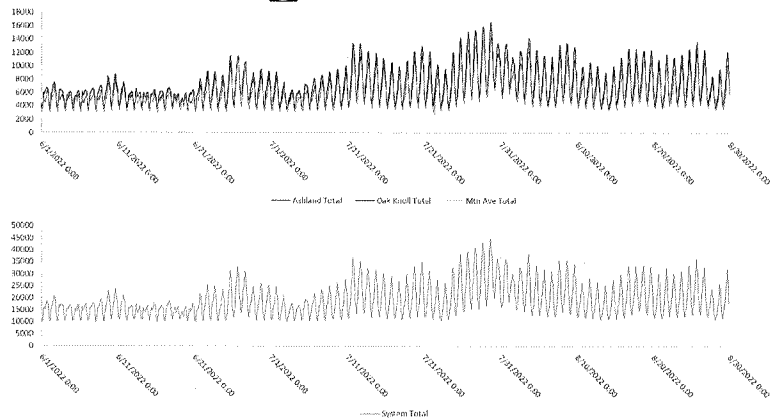
- Example: ~2016, a 10 MW solar power generation facility on the Imperatrice property was under discussion.
- This aligns well with CEAP goals.
- Considerations:
 - Above the ‘5 MW’ limit for a single combined development which requires a special interconnection application to be approved.
 - To interconnect with existing distribution feeders, the solar plant output cannot be greater than the load, to avoid reverse power flow and protection issues.



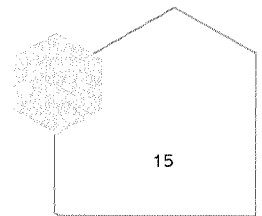
Renewable Energy Discussion

Solar Energy – “Large” PV Integration

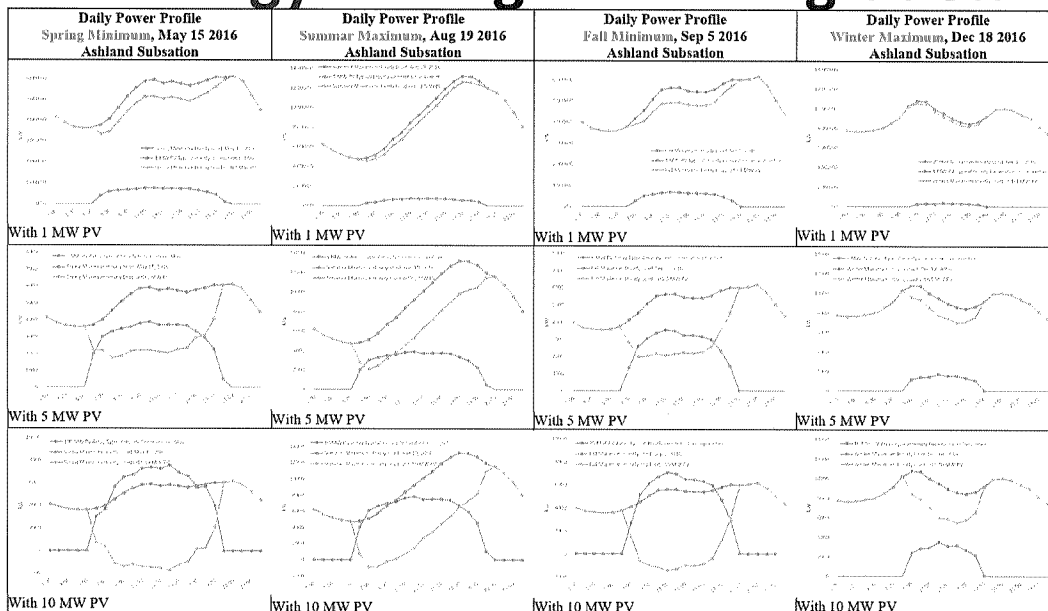
- Considerations (Cont.):
 - Daytime peak load for feeder A2002 is around 1 MW to 2 MW.
 - Daytime peak load for M3006 is around 0.5 MW to 1.5 MW.
 - Result was a need to interconnect with multiple backbone feeder and curtailment functions reducing net production.
 - New substation or dedicated feeder could be considered but adds substantial cost.



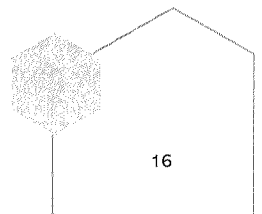
Renewable Energy Discussion



Solar Energy – “Large” PV Integration



Renewable Energy Discussion



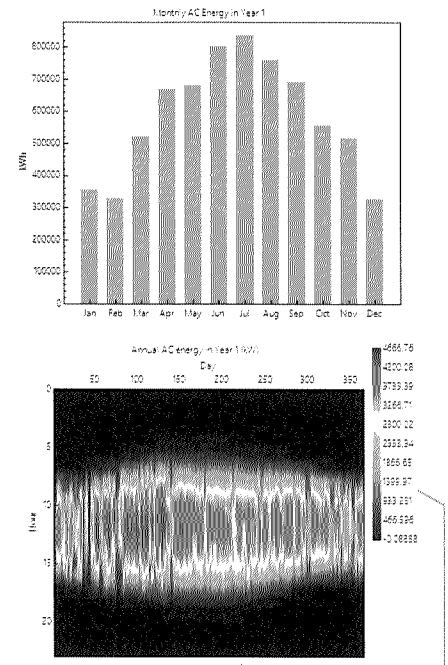
Solar Energy – “Large” PV Integration

- Using a 5 MW solar farm as an example using Ashland's weather data:
 - DC capacity 5.6 MW
 - AC capacity 4.8 MW
 - DC/AC ratio 1.17
 - Total module area 32,000 m² or 7.9 acres
 - 1st Year AC energy 7052 MWh
 - LCOE 12.03 cents/kWh nominal
 - Total installed cost ~\$11M, PV system only (cost subject to many other factors)

- Acre/MW (1st Year) 1.65
- Acre/1,000 MWh (1st Year) 1.12
- \$/Acre \$1.56M

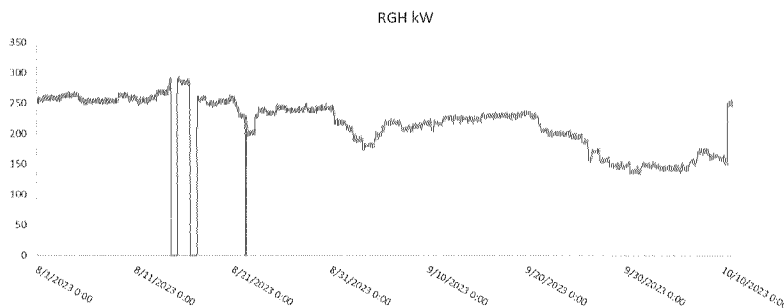
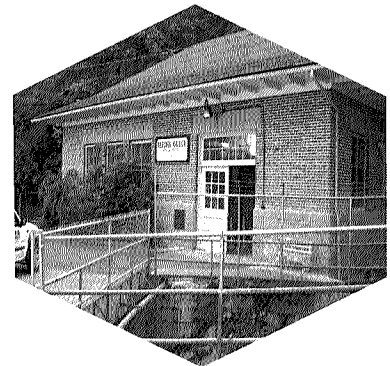
Average kWh usage for 1,500 sq. ft home - 37 kWh per day, 13,500 kWh per year
=> ~66 homes per acre

Renewable Energy Discussion

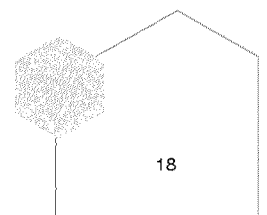


Hydro Power

- Reeder Gulch Hydroelectric (RGH), Hosler Dam
- 845 kVA generator, limited by penstock and water demand
- ~250 kW power output continuously during normal conditions
- ~0.56% of the total peak consumption (~45 MW)
- ~1% to 4% of the total consumption during non-peak hours



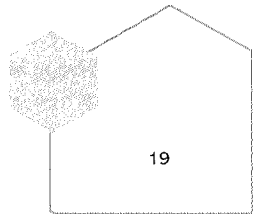
Renewable Energy Discussion



Other Resources

- Biomass:
 - Potential biomass plant expansion in the Rogue Valley
 - Potential biomass cogen plant at Southern Oregon University.
- Biogas:
 - Methane gas from food waste, yard waste and manure that can be used to generate electricity or as a vehicle fuel.
- Geothermal:
 - Geothermal for power generation (e.g., geothermal plant in OIT campus, about 2 MW)
 - Direct use for heating
- Wind:
 - County-level collaborative effort

Renewable Energy Discussion

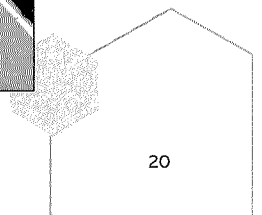
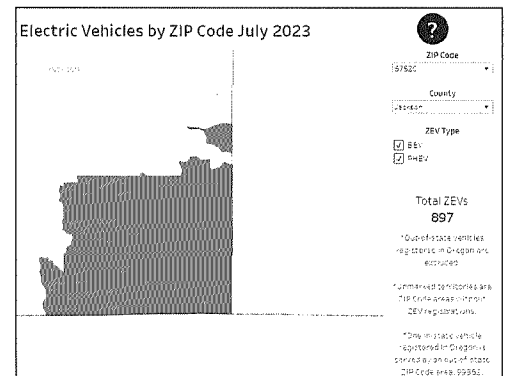


19

Electric Vehicles

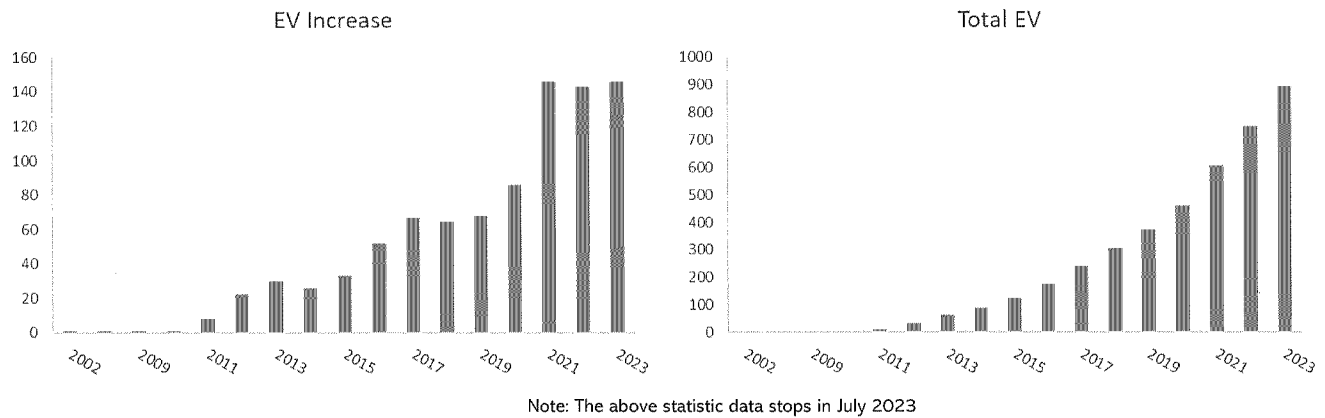
- An important part of the City's CEAP.
- Electric Vehicle Incentive Program: <https://ashlandor.org/climate-energy/find-resources/transportation/>
- According to Oregon.gov, the total number of registered electric vehicles in Oregon by July 2023 is 74,427.
- The City of Ashland (Zip Code: 97520) has about 900 by July 2023.

Renewable Energy Discussion



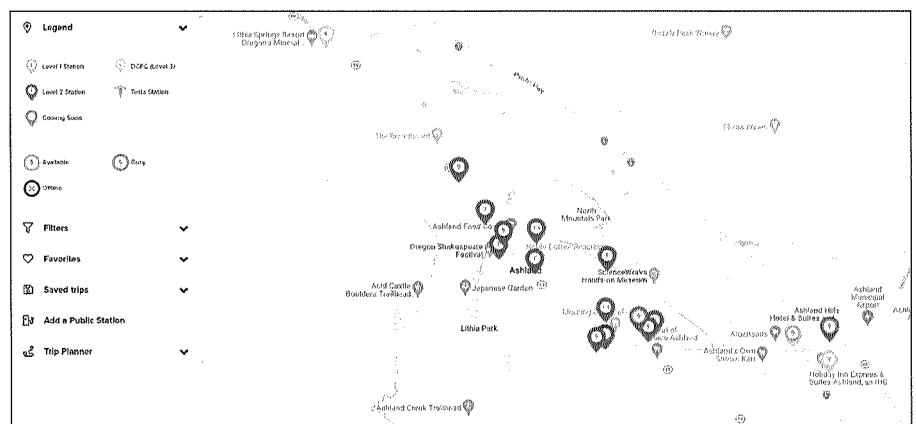
20

- Based on the current growth speed, expect close to 1000 EVs increase in the next 4 to 5 years in Ashland, and 3000 to 5000 EVs in the next 10 years (affected by regulating & incentive policies and supply chain).



Electric Vehicle Charging Station

- Currently 16 City-owned, Level 2 chargers [Public]
- 24 Tesla superchargers [Public]
- 11 City-owned Level 2 chargers at the service center
- Plan to add 20 more City-owned Level 2 public chargers in 2024
- Plan to add six more Level 2 and two Level 3 chargers at the service center

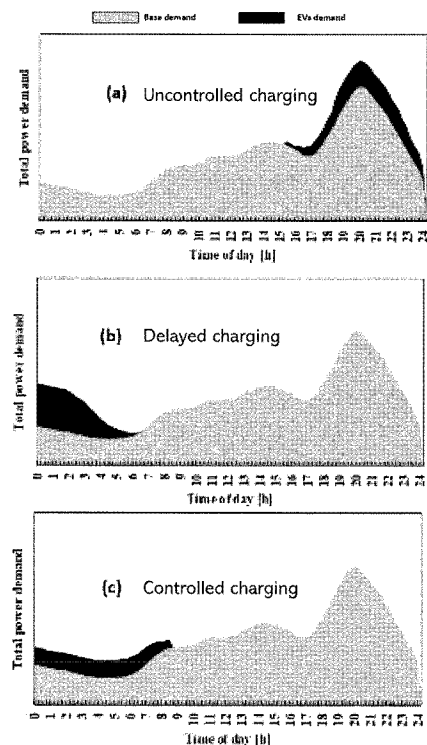


Electric Vehicle Challenges

- Increased EV brings the following challenges
 - Increase power demand. EV charging requires a significant amount of electricity, especially during peak charging periods. This increased demand can strain the existing infrastructure of the electricity system, leading to potential issues such as voltage fluctuations and load imbalances.
 - Potential equipment overload. Simultaneous charging during peak times can overload local transformers and distribution circuits, which can result in power outages or require expensive infrastructure upgrades to meet the growing demand.
 - Cost from
 - Infrastructure upgrade
 - Distribution transformers have to be sized with future EV additions. However, City has to cover the transformer no-load losses
 - Technology upgrade for smart charging based on demand response

Electric Vehicle Challenges

- It increases the system peak when using uncontrolled charging.
- Smart charging
 - Delayed charging
 - Controlled charging
 - Demand response
 - Using a dynamic rate structure to reshape the load curve (Peak Shift or Shaving)



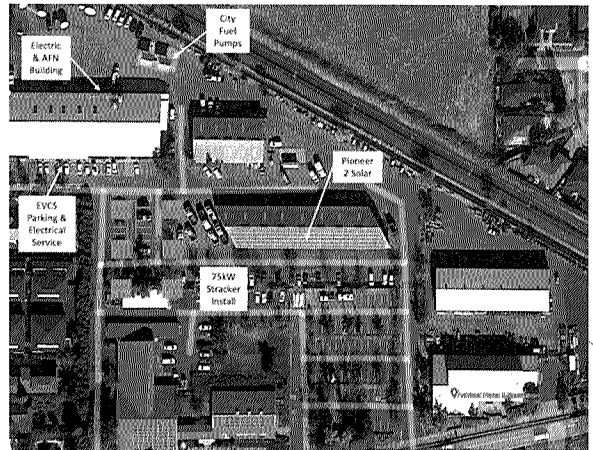
Electric Vehicle Challenges

- For 1000 EVs, assuming
 - Each has a charger
 - 70% are Level 1, ~1.5 kW
 - 30% are Level 2, ~15 kW
 - Uncontrolled charging
 - A diversity factor of 2.5 (40% of them are in use concurrently)
- The estimated total kW increase during the charging hours is about 2.2 MW
- Without diversifying the total estimated peak is about 5.5 MW

Charger Type	Typical Output Power	Estimated Charging Time (40 kWh)	Estimated Range per Hour	User Case
Level 1	1 – 1.8 kW	22 – 40 hours	3 – 7 miles/hour	Home / Backup
Level 2	3 – 22 kW	2 – 13 hours	10 – 75 miles/hour	Work / Hotel / Public chargers
Level 3	30 – 360 kW	15 mins – 1.5 hours	120 – 1400 miles/hour	Fleets / Dealer / Hwy service / Supercharger

Microgrid

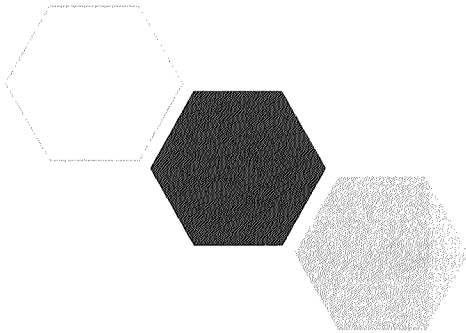
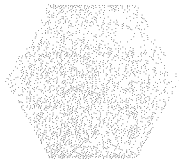
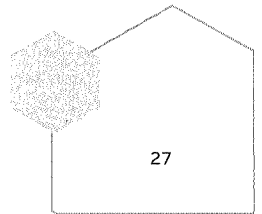
- A microgrid can connect and disconnect from the grid to operate in grid-connected or island mode. Improves reliability and resilience to grid disturbances.
- The Oregon Department of Energy Renewable Energy Grants
- **Project: City Service Center Microgrid Grant**
 - \$940,000 Grant
 - Stracker Solar System
 - 75 kW dual-axis tracking system and lithium battery
 - Expected to generate 170,000 kWh each year
 - Level 3 charging stations



Other Considerations

- Besides the benefits of greenhouse gas emission reduction, increased renewable portfolios can result in some level of instability, reduced power quality, and system operation challenges.
- Infrastructure upgrades may be needed on various levels:
 - Substation
 - Feeder
 - Distribution transformers
 - Communication and situation awareness (i.e., SCADA)
- The City may want to consider additional efforts on:
 - Public education (e.g. charging times that have most impact on electric infrastructure)
 - Dynamic rate structure

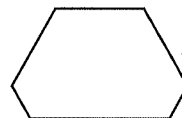
Renewable Energy Discussion



Thank You

Martin Stoddard

martin.stoddard@stoddardpower.com





Water and Enterprise System Utility Rates

December 4, 2023 Council Study Session

Water Rates



Water Utility

The Water Division consists of Supply, Treatment, Distribution and Conservation. The core of the water system includes Hosler Dam and Reeder Reservoir, a water treatment plant, over 119 miles of distribution piping, six booster pump-stations, telemetry equipment, 32 pressure relief valves, 1,281 hydrants and four potable water storage reservoirs providing 6.7 million gallons of storage

Regulatory:

- The Oregon Health Authority provides regulatory oversight for the treatment and distribution of potable water
- The Federal Energy Regulatory Commission provides regulatory oversight on Hosler Dam as the City is a generator of hydroelectric power

Water Division

Conservation Specialist (2 FTE)

Water Quality Supervisor (2 FTE)

SCADA Technician (0.5 FTE)

Water Quality Technician (2 FTE)

Utility Technician (1 FTE)

Senior Utility Worker (4 FTE)

Water Meter/Inspector (5 FTE)

Utility Worker II (5 FTE)

Utility Worker I (10 FTE)

Water Plant Supervisor (1 FTE)

Project Manager (1 FTE)

Treatment Plant Operator II (3 FTE)

Senior Plant Operator (1 FTE)

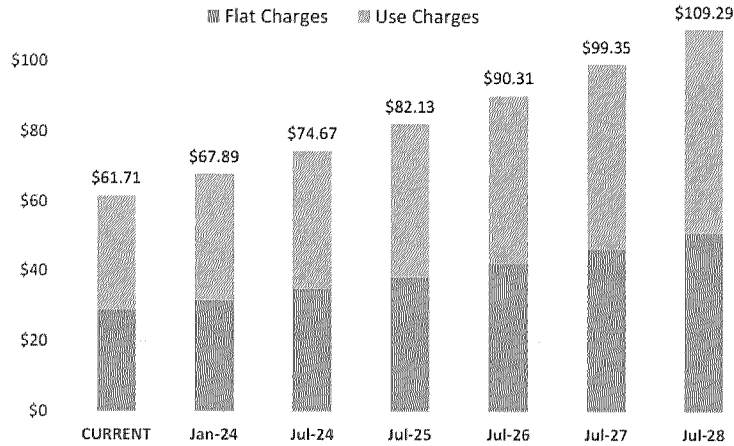
19.5 FTE



Water Utility

- Projected Rate Increase FY24/25 – 10%

Single Family Home Bill for 1,000 cubic feet



Water Treatment Plant Project

- Currently at 90% design
 - Design Complete by end of 2023
 - Bid in Winter/Spring of 2024
 - Construction Start Summer 2024
- Environmental Protection Agency – 100% funding
 - \$75 Million Maximum Award
- Next Steps
 - Update Borrowing Resolution – January 2024
 - Finalize Master Bond Declaration
 - Close Loan with EPA – April/May 2024
 - Grant Funding Opportunities

Cost Summary

Summary of Opinion of Probable Construction Cost		
High Range		Low Range
+15%	WTP Construction Costs	-10%
\$ 70,424,000	\$ 61,238,000	\$ 55,115,000
Summary of Opinion of Probable Construction Cost		
High Range		Low Range
+15%	Solar Array Construction Costs	-10%
\$ 2,458,000	\$ 2,137,000	\$ 1,924,000
Summary of Opinion of Probable Construction Cost		
High Range		Low Range
+15%	BESS Construction Costs	-10%
\$ 3,063,000	\$ 2,663,000	\$ 2,397,000

Cost of Service – Water

- Last Water Utility Cost of Service Completed in 2016
 - Creates a Defensible Rate Structure
 - Equitable over Customer Classes
- Recommend Updating
 - Equity and Progressive Structure (Commodity Charge)



Wastewater Utility

The Wastewater Division consists of collection and treatment of wastewater. The core of the system includes 112.9 miles of collection system piping, 2,245 manholes, six (6) lift stations, telemetry equipment and a wastewater treatment plant.

Regulatory:

- The City operates under a National Pollution Discharge Permit (NPDES) that is overseen by the Department of Environmental Quality (DEQ)

Wastewater Division	
Wastewater Collections Supervisor (0.80 FTE)	13.8 FTE
Wastewater Treatment Supervisor (1 FTE)	
Senior Utility Worker (4 FTE)	
Utility Worker II (0.75 FTE)	
Utility Worker I (1.75 FTE)	
SCADA Technician (0.5 FTE)	
Project Manager (1 FTE)	
Wastewater Utility Technician (1 FTE)	
Wastewater Treatment Plant Operator (1 FTE)	
Wastewater Treatment Plant Lab Technician (1 FTE)	
Wastewater Senior Treatment Plant Operator (1 FTE)	

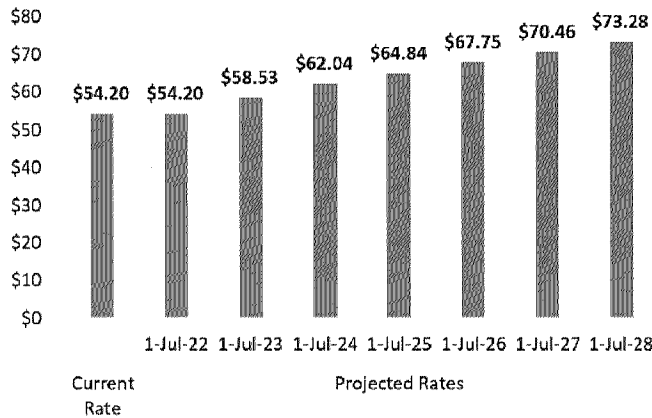




Wastewater Utility

- Projected Rate Increases FY25 – 6%

Single-Family Home Bill Impact



FY25 – \$57.45/month



Storm Drain Utility

The Stormwater Division consists of collections with staff support included with the Street and Wastewater Divisions. The core of the storm drain system includes 133.4 miles of storm drainage pipe and culverts, 4,348 inlets/catch basins, 990 manholes, and 449 outfalls.

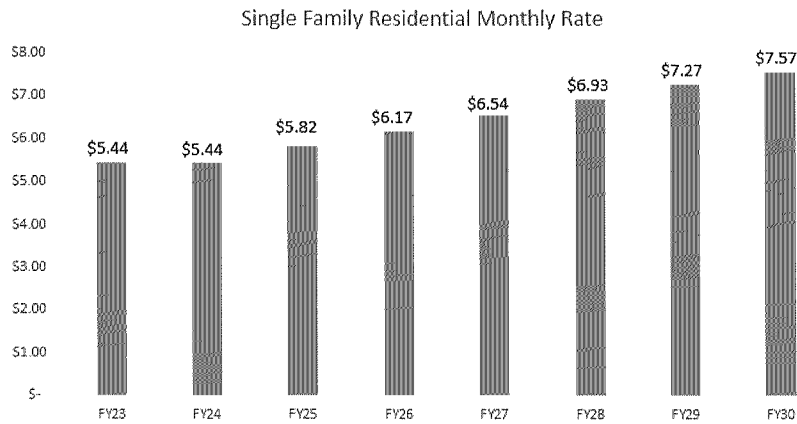
The stormwater conveyance and outfall system operate under a Department of Environmental Quality (DEQ) MS4* permit, which regulates maintenance and inspection schedules in addition to public outreach and education regarding stormwater conveyance and treatment.

Stormwater Division	
Street Supervisor	(0.25 FTE)
Engineering Technician II	(1 FTE)
Wastewater Collections Supervisor	(0.20 FTE)
Utility Worker II	(1.35 FTE)
Senior Utility Worker	(0.95 FTE)
Utility Worker I	(1.35 FTE)
Water Resource Technician	(0.40 FTE)

4.5 FTE

Storm Drain Utility

- Projected Rate Increases FY25 – 7%



Affordability Analysis

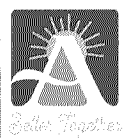
- Metrics – 6 to 10% of Monthly Median Income for utilities
- Current Comprehensive Bill ~ 6.63%

Utility Bill Affordability Analysis

2021 Median Household Income \$ 5,303.42

2% of Median Household Income Per Utility

Last Update	Utilities	Monthly Rate	% of Median Income
2019	Street Utility Fee	\$ 9.56	0.18%
2021	Storm Drain Utility Fee	\$ 5.44	0.10%
2019	Wastewater (average)	\$ 54.20	1.02%
2019	Water (average)	\$ 61.71	1.16%
2021	Electric (average)	\$ 76.88	1.45%
2021	Ashland AFN	\$ 65.00	1.23%
2022	Recology	\$ 22.67	0.43%
N/A	Natural Gas	\$ 56.00	1.06%
	Totals	\$ 351.46	6.63%





Affordability Analysis

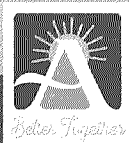
- Metrics – 6 to 10% of Monthly Median Income for utilities
- Proposed Comprehensive Bill ~ 6.82%

Projected Update	Utilities	Monthly Rate	% of Median Income
2023 (3%)	Street Utility Fee	\$ 9.85	0.19%
2024 (7%)*	Storm Drain Utility Fee	\$ 5.82	0.11%
2024 (6%)**	Wastewater (average)	\$ 57.45	1.08%
2024 (10%***)	Water (average)	\$ 67.88	1.28%
2023	Electric (average)	\$ 76.88	1.45%
2023	Ashland AFN	\$ 65.00	1.23%
2022	Recology	\$ 22.67	0.43%
N/A	Natural Gas	\$ 56.00	1.06%
	Totals	\$ 361.55	6.82%

*Projected in the adopted Storm Drain System Master Plan (July 1, 2024)

**Projected in the adopted Collection System Master Plan (July 1, 2024)

***Projected in October 2023 Water Rate Analysis



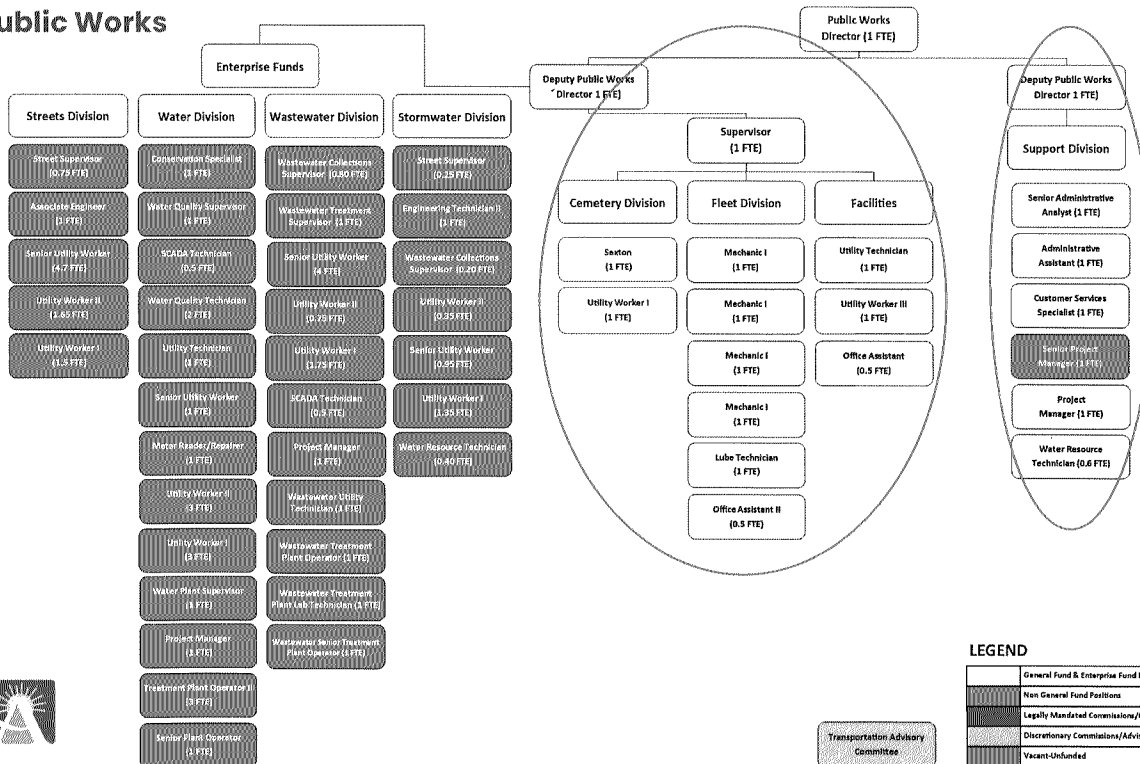
Low Income Utility Assistance

- Hansford Economic Review of the City's Senior Assistance Program
- Recommendations
 - Update/Eliminate Age Threshold
 - Change Income Level Threshold
 - New Resolution(s) To Replace 92-22
 - Update Ashland Municipal Code Section 14.02.015

QUESTIONS?



Public Works



Dana Smith

From: Mariane Berry
Sent: Monday, December 4, 2023 3:29 PM
To: City Council
Subject: RE: City Council Contact Form Submitted

Hello Council –

I wanted to address and clarify item #5 in the below comments. As you may know, our enterprise resource planning system (ERP), Tyler Munis, is undergoing a scheduled system upgrade, one that has been planned for months. This affects utility billing, accounting, procurement, planning/building, public works and courts, and is in effect today and tomorrow. We should be live again on Wednesday. As with all technology upgrades, we anticipate meaningful improvements and are hopeful that our residents will see and experience those improvements, and that our departments will also realize additional functionality with the new upgrade.

As we move forward with the upgrade, we will continue to assess the system for reliability, accessibility, performance and other attributes that will best serve our overall operations. Any software changes, particularly at the ERP level, must take into consideration the collective needs of the city.

We are close to being fully staffed in Utility Billing but as I have indicated previously, there is a training arc that simply takes time. We have kept up with our 48-hour turnaround time for non-emergency inquiries, and quite often it is 24-hours; we have opened up at the Grove on Fridays for in-person service; and soon, we are planning on opening phone lines in the new year. We will not be publicizing that until we are certain we are able to. However, if anything comes up with your constituents, I wanted to let you know of our good efforts to this end.

If you have any questions please reach out – best,
Mariane

From: City of Ashland, Oregon <administration@ashland.or.us>
Sent: Monday, December 4, 2023 1:38 PM
To: City Council <council@ashland.or.us>
Subject: City Council Contact Form Submitted

[EXTERNAL SENDER]

*** FORM FIELD DATA***

Full Name: Jeff Sharpe

Subject: Electric Master Plan and 1MW CREP grant

Message: Greetings Counselors, Happy you will be getting an update from Stoddard on the City Master Plan this evening; I know they will be doing a great job for us. When SES considered responding to that project's RFP there were several critical items I felt missing that I would like to mention now. It is notable that the City has received a \$100,000 CREP Planning Grant to explore/plan 1MW City solar projects and the infrastructure to support them. All of the items below could potentially be addressed in that plan. Thomas related that the grant project is being given to Stoddard, and so this might be an opportunity to help direct that project to the City's best interests. Suggestions- 1) Development of a credible Integrated Resource Plan (IRP) is crucial to moving our utility into the 21st century 2)

Exploration of our future 2025 BPA contract options and how they will effect our? unique (non-IOU) position for local self-reliance? 3) Exploration of the Current BPA contract Take or Pay provisions and what the real financial effects might be, as well as rules being implemented that are not in our current contract?(eg BPA's Wally Roghair's 200kW /transformer limit I negotiated in 2020) 4) Consider the cost and benefits of establishing an Ashland Electric Board to help staff and the City make wise decisions as we seek safety,?sustainability and equity for our City 5) Consider the cost and benefits of upgrading the utility billing system to highlight the savings and impact of City renewable energy projects; as well as policy, incentive and possible financing services Ashland Electric could offer to help achieve City Goals 6) Quantify the vulnerabilities?of the current transmission system serving Ashland, and how we can best prepare for its failure 7) Explore the specific costs and benefits of the three 1MW solar system types we presented when suggesting the 1-MW CREP Planning Grant. These include both before and behind the meter, with 3 funding options (notably we already have investors interested in building each of these systems now) So sorry to hit you all with this at the last minute (I just learned of the?worksession). Happy to discuss anytime, Jeff Sharpe PE?

*** USER INFORMATION ***

SubscriberID: -1

SubscriberUserName:

SubscriberEmail:

RemoteAddress: 66.241.70.76

RemoteHost: 66.241.70.76

RemoteUser:

Dana Smith

From:
Sent: Monday, December 4, 2023 9:38 AM
To: City Council
Subject: Water rates proposal

[EXTERNAL SENDER]

Hello Council,

Please focus more on utility rate affordability in our city. Besides high rents, we also have relatively high utility rates which make the housing crunch even more burdensome on much of our community. There are many ways that lower income individuals and families could be helped when it comes to the utility bill:

1. A more robust program of subsidies based on income.
2. Lower the rates for smaller multifamily units.
3. Raise rates for large/mega large homes.
4. Look carefully at how we might phase our WTP project. We still have a functional WTP; we need to be sure that our dam and reservoir is in good shape; we should recognize the value of water conservation and make sure we provide adequate support for wisely reducing our per capita water consumption which will result in less \$ and less greenhouse gas production from energy and materials used to treat and transport our water.

Thank you,
Larry Cooper
Ashland

--
Larry

Dana Smith

From: City of Ashland, Oregon <administration@ashland.or.us>
Sent: Sunday, December 3, 2023 6:27 PM
To: City Recorder; Dorinda Cottle
Subject: Council Public Testimony Form Submitted

[EXTERNAL SENDER]

*** FORM FIELD DATA***

Full Name: John Engelhardt

Meeting Date : Monday, Dec. 4, 2023

Type of Testimony: WRITTEN

Written Testimony: Society of St. Vincent de Paul Utility Assistance Time Frame: Fiscal Year October 2022-September 2023 Purpose: To provide some context and insight into utility assistance we provide to residents of Ashland.

Although one of our guiding principles is that no work of charity is foreign to the Society, the bulk of our work and expenditure involves helping people stay housed. This primarily means assisting people with rent or utilities. Last fiscal year 62% of our funds went to rent and 16% to utilities. Totals: We assisted 132 households with utility help, including customers of the City of Ashland, Avista, Pacific Power, Recology and City of Talent. Of those, 91 households were clients of the city of Ashland, or 69%. Financially we paid the city of Ashland \$22,143 or 65% of our utility outlay. Demographics: Of those assisted, 2/3 were adults, 1/3 children. 15% of the adults were disabled. Regarding household size, 41% were singles and 28% were 2-person. Only 15% were 3-person households. With respect to age, 19% were 65 and over. Utility Assistance Programs: When we assist people, we find that very few are on any of the city's utility assistance programs (ALIEAP, Sr./Disabled Year-Round, or One-Time). I realize these are advertised in the City Source newsletters, and it's disheartening to find so many who are eligible but not signed up. We recommend they sign up, but we don't have the means or availability to follow up on that. Utility Base Rates: When one looks at a current city utility bill, the base charges total over \$100 (see table). This is before a light switch or a faucet is turned on. That base rate is 8% of the maximum income threshold for a year-round 30% discount for a senior or disabled person ($\$14,580/12=\1215 , $\$100/\$1215=.08$). Recommendations: In March of 2020, an ad-hoc group representing the city of Ashland (Kelly Madding), the City Council (Dennis Slattery), OHRA (Ken Gudger), SVdP (myself), and the H&HS Commission (Rich Rohde) developed a set of Utility Policy Recommendations. Then COVID shut things down. I am enclosing these recommendations as many of them are still worthy of consideration. 1. Increase awareness of utility assistance programs to those in need a) Mailer included with utility bill and city source newsletter showing programs and income levels associated with each. Make it colorful and easy to read! b) When client calls Utility office for help in paying their bill, work with them to see if they are eligible for any assistance programs. c) When client calls Utility office for help and is not eligible for programs, refer them to sources of help: OHRA, SVdP, Access, Salvation Army, etc. d) Get ACCESS involved in signing people up for assistance here in town. 2. Expand awareness of ways citizens can contribute to Assistance Funding a) Expand Round Up program to allow for additional \$ contributions b) Make donation process easy for ongoing contributions as well as one-time donations. c) Make it clear that the donations are dedicated to Assistance programs d) Reach out to churches and other NGOs to spread the word about the assistance programs and donation process 3. Reorganize the utility shut-off door hanger a) Mention all 3 assistance programs on the door hanger b) Reorder the list of agencies that can provide help: OHRA, SVdP, Access, Salvation Army, AFS, JCFC 4. Track signups for assistance programs for historical data analysis and success of efforts going forward a) Provide periodic reports to Ashland's Housing and Human Service Commission in collaboration with OHRA and SVdP on success of recommendations being implemented (ex: # clients on each assistance program, # accounts participating in Round Up and other donation options, etc.) 5. Analyze the Call-Out process for efficiency, success, and response in collaboration with OHRA & SVdP to include: a) Comparison with pre-callout success rate (# responding after 1st door

hanger) b) Exploration of why the # of door notices and disconnects increased substantially in 2019, concomitant with implementation of Call-Out process c) Send analysis to city's H&HS Commission Utility Policy Recommendations to Ashland Housing and Human Services Commission Utility Ad Hoc Group (SVdP, OHRA, H&HS Commission, City Council liaison, City Manager) Utility Ad Hoc Committee Recommendations 6. Increase awareness of conservation and energy audit programs a) Mention energy audit and conservation programs in City Source newsletter b) Suggest helping agencies inform clients to initiate contact with city regarding energy assistance/conservation programs c) Suggest a meter check if bill seems abnormally high. 7. Consider increasing the financial benchmarks for the 3 assistance programs. a) Use the financial thresholds from Access as a starting point, but allow for increase as allowed by city ordinance b) Consider a higher income threshold for single households, as they bare a disproportionate share of the fixed costs (base rates).

*** USER INFORMATION ***

SubscriberID: -1

SubscriberUserName:

SubscriberEmail:

RemoteAddress: 66.241.70.76

RemoteHost: 66.241.70.76

RemoteUser:



Society of St. Vincent de Paul Utility Assistance

Time Frame: Fiscal Year October 2022-September 2023

Purpose: To provide some *context and insight* into utility assistance we provide to residents of Ashland. Although one of our guiding principles is that *no work of charity is foreign to the Society*, the bulk of our work and expenditure involves helping people stay housed. This primarily means assisting people with rent or utilities. Last fiscal year 62% of our funds went to rent and 16% to utilities.

Totals: We assisted 132 households with utility help, including customers of the City of Ashland, Avista, Pacific Power, Recology and City of Talent. Of those, **91 households** were clients of the city of Ashland, **or 69%**. Financially **we paid the city of Ashland \$22,143** or **65%** of our utility outlay.

Demographics: Of those assisted, 2/3 were adults, 1/3 children. **15%** of the adults were disabled. Regarding household size, **41% were singles** and 28% were 2-person. Only 15% were 3-person households. With respect to age, **19% were 65 and over**.

Utility Assistance Programs: When we assist people, we find that very few are on any of the city's utility assistance programs (ALIEAP, Sr./Disabled Year-Round, or One-Time). I realize these are advertised in the City Source newsletters, and it's disheartening to find so many who are eligible but not signed up. We recommend they sign up, but we don't have the means or availability to follow up on that.

Utility Base Rates: When one looks at a current city utility bill, the base charges total over \$100 (see table). This is before a light switch or a faucet is turned on. That base rate is **8%** of the maximum income threshold for a year-round 30% discount for a senior or disabled person ($\$14,580/12=\1215 , $\$100/\$1215=.08$).

Service Description	Base Charge
Electric Residential	\$16.25
Water Residential	\$15.62
Water Customer	\$13.33
Sewer Residential	\$33.94
Electric Users Tax	\$4.06
Street User Fee S.F.	\$9.56
Storm Drain S.F.	\$5.43
AFR 3/4 Inch	\$3.00
Public Safety Support	\$1.50
TOTAL BASE FEE	\$102.69

Recommendations: In March of 2020, an ad-hoc group representing the city of Ashland (Kelly Madding), the City Council (Dennis Slattery), OHRA (Ken Gudger), SVdP (myself), and the H&HS Commission (Rich Rohde) developed a set of Utility Policy Recommendations. Then COVID shut things down. I am enclosing these recommendations as many of them are still worthy of consideration.

1. Increase awareness of utility assistance programs to those in need

- a) Mailer included with utility bill and city source newsletter showing programs and income levels associated with each. Make it colorful and easy to read!
- b) When client calls Utility office for help in paying their bill, work with them to see if they are eligible for any assistance programs.
- c) When client calls Utility office for help and is not eligible for programs, refer them to sources of help: OHRA, SVdP, Access, Salvation Army, etc.
- d) Get ACCESS involved in signing people up for assistance here in town.

2. Expand awareness of ways citizens can contribute to Assistance Funding

- a) Expand *Round Up* program to allow for additional \$ contributions
- b) Make donation process easy for ongoing contributions as well as one-time donations.
- c) Make it clear that the donations are dedicated to Assistance programs
- d) Reach out to churches and other NGOs to spread the word about the assistance programs and donation process

3. Reorganize the utility shut-off door hanger

- a) Mention all 3 assistance programs on the door hanger
- b) Reorder the list of agencies that can provide help: OHRA, SVdP, Access, Salvation Army, AFS, JCFC

4. Track signups for assistance programs for historical data analysis and success of efforts going forward

- a) Provide periodic reports to Ashland's Housing and Human Service Commission in collaboration with OHRA and SVdP on success of recommendations being implemented (ex: # clients on each assistance program, # accounts participating in Round Up and other donation options, etc.)

5. Analyze the Call-Out process for efficiency, success, and response in collaboration with OHRA & SVdP to include:

- a) Comparison with pre-callout success rate (# responding after 1st door hanger)
- b) Exploration of why the # of door notices and disconnects increased substantially in 2019, concomitant with implementation of Call-Out process
- c) Send analysis to city's H&HS Commission

6. Increase awareness of conservation and energy audit programs

- a) Mention energy audit and conservation programs in City Source newsletter
- b) Suggest helping agencies inform clients to initiate contact with city regarding energy assistance/conservation programs
- c) Suggest a meter check if bill seems abnormally high.

7. Consider increasing the financial benchmarks for the 3 assistance programs.

- a) Use the financial thresholds from Access as a starting point, but allow for increase as allowed by city ordinance
- b) Consider a higher income threshold for single households, as they bare a disproportionate share of the fixed costs (base rates).

Study Sessions

Speaker Request Form

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THOSE INTERESTED IN GIVING ORAL TESTIMONY AT A COUNCIL MEETING
WILL NEED TO:**

- 1) Complete this form, including the topic you want to speak on and send to the City Recorder.
- 2) Begin the oral testimony during the meeting by stating your name for the record.
- 3) Limit your comments to the amount of time given to you by the Mayor, usually 3 or 5 minutes.
- 4) If you present written materials, please email a copy of the materials with this form to the City Recorder for the record.
- 5) Speakers are solely responsible for the content of their public statement.

Meeting Date	<u>12-4-23</u>
Name	<u>Tam Masden</u>
	(please print)
City	<u>Ashland, OR.</u>

Study Session

Agenda topic/item number/Topic Public Input.

The Public Meeting Law requires that all city meetings are open to the public. Oregon law does not always require that the public be permitted to speak.

Comments and statements by speakers do not represent the opinion of the City Council, City Officers or employees or the City of Ashland.

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Meeting Date	<u>12/4</u>
Name	<u>JOSEPH WIGER</u> (please print)
City	<u>ASH</u>

Study Session

Agenda topic/item number/Topic _____

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Meeting Date	<u>12-4-23</u>
Name	<u>Karen</u> (please print)
City	<u>Ashland</u>

Study Session

Agenda topic/item number/Topic Night Lawn

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Meeting Date	<u>12/4/23</u>
Name	<u>Rick Bevel</u>
	(please print)
City	<u>Ashland</u>

Study Session

Agenda topic/item number/Topic nite lawn

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Meeting Date	<u>12.04-23</u>
Name	<u>Ainamarie LeBeau</u> (please print)
City	<u>Ashland</u>

Study Session

Agenda topic/item number/Topic Night Session

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Study Sessions

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speaking last

Meeting Date	12/4/23
Name	Debbie Neisewander
	(please print)
City	Ashland

Study Session

Agenda topic/item number/Topic nite lawn

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Meeting Date 12-4-2023

Name Austin Konzelman
(please print)

City Ashland, OR

Study Session

Agenda topic/item number/Topic _____

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