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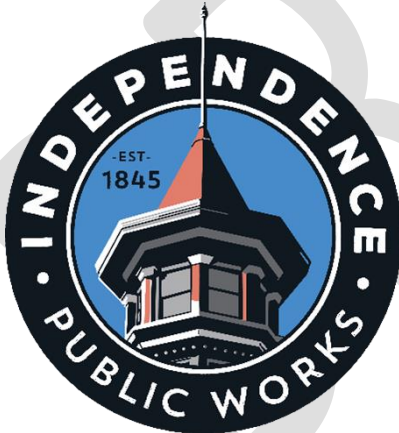
October

# 2023

Water System Development  
Charge Update

Final  
Report

Prepared for:



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# City of Independence 2023 Water SDC Methodology Update



## Table of Contents

Introduction/History of the Project .....	1
Analytical Process for the Methodology Updates .....	2
SDC Legal Authorization and Background.....	3
Reimbursement Fee Methodology .....	3
Improvement Fee Methodology.....	4
Methodology for the Granting of Credits, Discounts, and Exemptions.....	7
SDC Credits Policy .....	7
SDC Discount Policy.....	7
Partial and Full SDC Exemption.....	8
Water SDCs .....	8
Water Capital Improvement Plan .....	8
Wastewater Customers Current and Future Demographics .....	18
Existing Wastewater Demand and Population Growth .....	18
Estimated Demand per Equivalent 5/8" or 3/4" Water Meter.....	18
Projected Demands.....	19
Reimbursement Fee Calculations .....	20
Improvement Fee Calculations .....	23
Water SDC Model Summary .....	24
Water SDCs in Neighboring Communities .....	26
Appendix A – Historical Price Movements in the Engineering News Record Construction Cost Index.....	28

## Introduction/History of the Project

The City of Independence conducts periodic updates to its Comprehensive Plan and its various Public Facility Plans to provide orderly and sustainable growth of municipal infrastructure. A key component to funding these public facilities is the system development charge (SDC) program. SDCs are one-time charges for new development—designed to recover the costs of infrastructure capacity needed to serve new development. This section describes the policy context and project scope upon which the body of this report is based. It concludes with a numeric overview of the calculations presented in subsequent sections of this report for water SDCs.

The city’s current schedule of water SDCs were last reviewed in the Spring of 2004. Since that time, the City has completed a new master plan for water service. In September of 2023, the City hired Donovan Enterprises, Inc. to review and update the water SDC methodology. With this review and update, the City has stated a number of objectives:

- Review the basis for charges to ensure a consistent methodology;
- Address specific policy, administrative, and technical issues which had arisen from application of the existing SDCs;
- Determine the most appropriate and defensible fees, ensuring that development is paying its way;
- Consider possible revisions to the structure or basis of the charges which might improve equity or proportionality to demand;
- Provide clear, orderly documentation of the assumptions, methodology, and results, so that City staff can, by reference, respond to questions or concerns from the public.

This report provides the documentation of that effort and was done in close coordination with City staff and available facilities planning documents. The SDC updates comply with Independence Municipal Code chapter 34, Article VII (sections 34-438 through 34-451).

Table 1 gives a component breakdown for the current and proposed residential equivalent SDCs for water services.

Table 1 - Component Breakdown of the Proposed Residential Equivalent Water SDCs

Water SDC Components	Proposed	Current	Difference
Reimbursement fee	875	-	875
Improvement fee	22,431	3,149	19,282
Administration fee at 5%	1,165	158	1,007
Total water SDC	\$ 24,471	\$ 3,307	\$ 21,164

## Analytical Process for the Methodology Updates

The essential ingredient in the development of an SDC methodology is valid sources of data. For this project, the consultant team has relied on a number of data sources. The primary sources have been the newly formulated and adopted capital improvement plans for water. We have supplemented these data sources with City utility billing records, certified census data, and other documents that we deemed helpful, accurate, and relevant to this study. Table 2 contains a bibliography of the key documents/sources that we relied upon to facilitate our analysis and hence the resulting SDCs.

Table 2 - Data Sources for the Calculation of SDCs

Master Plan Document and/or Corroborating Source Documentation
<ul style="list-style-type: none"><li>• City of Independence Water System Master Plan, March, 2023; Westech Engineering, Inc.</li><li>• City of Independence water system twenty-year capital improvement plan, September, 2023; City of Independence Public Works Department</li><li>• City of Independence Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2021, and 2022</li><li>• Independence water system fixed asset schedule; June 30, 2023; City records</li><li>• City of Independence Utility Billing System – water system active accounts and meters in service report; August 31, 2023</li><li>• Portland State University, College of Urban Affairs, Population Research Center; Certified census for Independence, Oregon; June, 2022</li><li>• United States Census Bureau, American Community Survey, population data for the City of Independence, Oregon, 2020, 2022 estimated.</li></ul>

The data sources shown in Table 2 were used to formulate the two (2) components of the SDCs. These components are the reimbursement and improvement fees. The City has been constructing the SDCs with these two components for over twenty years, and our analysis does not propose changing that methodology. A brief definition of the two components are:

- *The reimbursement fee* considers the cost of existing facilities, prior contributions by existing users of those facilities, the value of the unused/available capacity, and generally accepted ratemaking principles. The objective is future system users contribute no more than an equitable share to the cost of existing facilities. The reimbursement fee can be spent on capital costs or debt service related to the systems for which the SDC is applied.
- *The improvement fee* portion of the SDC is based on the cost of planned future facilities that expand the system’s capacity to accommodate growth or increase its level of performance. In developing an analysis of the improvement portion of the fee, each project in the respective service’s capital improvement plan is evaluated to exclude costs related to correcting existing system deficiencies or upgrading for historical lack of capacity. An example is a facility which improves system capacity to better serve current customers. The costs for this type of project must be eliminated from the improvement fee calculation. Only capacity increasing/level of

performance costs provide the basis for the SDC calculation. The improvement SDC is calculated as a function of the estimated number of additional equivalent residential units to be served by the City's facilities over the planning period. Such a fee represents the greatest potential for future SDC changes. The improvement fee must also provide a credit for construction of a qualified public improvement.

## SDC Legal Authorization and Background

SDCs are authorized by Oregon Revised Statute (ORS) 223.297-314. The statute is specific in its definition of system development charges, their application, and their accounting. In general, an SDC is a one-time fee imposed on new development or expansion of existing development and assessed at the time of development approval or increased usage of the system. Overall, the statute is intended to promote equity between new and existing customers by recovering a proportionate share of the cost of existing and planned/future capital facilities that serve the developing property. Statute further provides the framework for the development and imposition of SDCs and establishes that SDC receipts may only be used for capital improvements and/or related debt service.

Finally, two cost basis adjustments are potentially applicable to both reimbursement and improvement fees: fund balance and compliance costs. In this study, the project team paid attention to this detail to align future infrastructure costs to those responsible for paying those costs. The reasons for this attention is as follows:

- *Fund Balances* - To the extent that SDC revenue is currently available in fund balance, that revenue should be deducted from its corresponding cost basis. For example, if the city has water improvement fees that it has collected but not spent, then those unspent improvement fees should be deducted from the water system's improvement fee cost basis to prevent charging twice for the same capacity.
- *Compliance Costs* - ORS 223.307(5) authorizes the expenditure of SDCs on "the costs of complying with the provisions of ORS 223.297 to 223.314, including the costs of developing system development charge methodologies and providing an annual accounting of system development charge expenditures." To avoid spending monies for compliance that might otherwise have been spent on growth-related projects, this report includes an estimate of compliance costs in its SDCs.

## Reimbursement Fee Methodology

The reimbursement fee represents a buy-in to the cost, or value, of infrastructure capacity within the existing system. Generally, if a system were adequately sized for future growth, the reimbursement fee might be the only charge imposed, since the new customer would be buying existing capacity. However, staged system expansion is needed, and an improvement fee is imposed to allocate those growth-related costs. Even in those cases, the new customer also relies on capacity within the existing system, and a reimbursement component is warranted.

In order to determine an equitable reimbursement fee to be used in conjunction with an improvement fee, two points should be highlighted. First, the cost of the system to the City's customers may be far less than the total plant-in-service value. This is due to the fact that elements of the existing system may have been contributed, whether from developers, governmental grants, and other sources. Therefore, the net investment by the customer/owners is less. Second, the value of the existing system to a new customer is less than the value to an existing customer, since the new customer must also pay, through an improvement fee, for expansion of some portions of the system.

The method used for determining the reimbursement fee accounts for both of these points. First, the charge is based on the net investment in the system, rather than the gross cost. Therefore, donated facilities, typically including local facilities, and grant-funded facilities, would be excluded from the cost basis. Also, the charge should be based on investments clearly made by the current users of the system, and not already supported by new customers. Tax supported activities fail this test since funding sources have historically been from general revenues, or from revenues which emanate, at least in part, from the properties now developing. Second, the cost basis is allocated between used and unused capacity, and, capacity available to serve growth. In the absence of a detailed asset by asset analysis, it is appropriate to allocate the cost of existing facilities between used and available capacity proportionally based on the forecasted population growth as converted to equivalent dwelling units over the planning period. This approach reflects the philosophy, consistent with the City's Updated Master Plans, that facilities have been sized to meet the demands of the customer base within the established planning period.

## **Improvement Fee Methodology**

There are three basic approaches used to develop improvement fee SDCs: "standards driven," "improvements-driven," and "combination/hybrid" approaches. The "standards-driven" approach is based on the application of Level of Service (LOS) standards for facilities. Facility needs are determined by applying the LOS standards to projected future demand, as applicable. SDC-eligible amounts are calculated based on the costs of facilities needed to serve growth. This approach works best where level of service standards have been adopted but no specific list of projects is available. The "improvements-driven" approach is based on a specific list of planned capacity increasing capital improvements. The portion of each project that is attributable to growth is determined, and the SDC-eligible costs are calculated by dividing the total costs of growth-required projects by the projected increase in projected future demand, as applicable. This approach works best where a detailed master plan or project list is available and the benefits of projects can be readily apportioned between growth and current users. Finally, the combination/hybrid-approach includes elements of both the "improvements driven" and "standards-driven" approaches. Level of Service standards may be used to create a list of planned capacity-increasing projects, and the growth required portions of projects are then used as the basis for determining SDC eligible costs. This approach works best where levels of service have been identified and the benefits of individual projects are not easily apportioned between growth and current users.

In the past, the City has utilized the "improvements-driven" approach for the calculation of SDCs. This study continues to use this method and has relied on the capital improvement plans that are incorporated in the master plans, and plan updates for the water systems.

For this SDC methodology update, the improvement fee represents a proportionate share of the cost to expand the systems to accommodate growth. This charge is based on the newly adopted capital improvement plans established by the City for water services. The costs that can be applied to the improvement fees are those that can reasonably be allocable to growth. Statute requires that the capital improvements used as a basis for the charge be part of an adopted capital improvement schedule, whether as part of a system plan or independently developed, and that the improvements included for SDC eligibility be capacity or level of service expanding. The improvement fee is intended to protect existing customers from the cost burden and impact of expanding a system that is already adequate for their own needs in the absence of growth.

The key step in determining the improvement fee is identifying capital improvement projects that expand the system and the share of those projects attributable to growth. Some projects may be entirely attributable to growth, such as a water distribution line that exclusively serves a newly developing area.

Other projects, however, are of mixed purpose, in that they may expand capacity, but they also improve service or correct a deficiency for existing customers. An example might be a water main oversizing project that both expands capacity to serve a newly developing area and corrects a chronic capacity issue for existing users. In this case, a rational allocation basis must be defined.

The improvement portion of the SDC is based on the proportional approach toward capacity and cost allocation in that only those facilities (or portions of facilities) that either expand the respective system's capacity to accommodate growth or increase its respective level of performance have been included in the cost basis of the fee. As part of this SDC update, City Staff and their engineering consultants were asked to review the planned capital improvement lists in order to assess SDC eligibility. The criteria in Figure 1 were developed to guide the City's evaluation:

Figure 1 - SDC Eligibility Criteria

**City of Independence**  
**Steps Toward Evaluating**  
**Capital Improvement Lists for SDC Eligibility**

ORS 223

1. Capital improvements mean the facilities or assets used for :
  - a. Source of water supply
  - b. Water treatment
  - c. Water transmission
  - d. Water storage
  - e. Water pumping and distribution

This definition DOES NOT ALLOW costs for operation or routine maintenance of the improvements;
2. The SDC improvement base shall consider the cost of projected capital improvements needed to increase the capacity of the systems to which the fee is related;
3. An increase in system capacity is established if a capital improvement increases the “level of performance or service” provided by existing facilities or provides new facilities.

Under the Utility’ approach, the following rules will be followed

1. Repair costs are not to be included;
2. Replacement costs will not be included unless the replacement includes an upsizing of system capacity and/or the level of performance of the facility is increased;
3. New regulatory compliance facility requirements fall under the level of performance definition and should be proportionately included;
4. Costs will not be included which bring deficient systems up to established design levels.

In developing the improvement fee, the project team in consultation with City staff evaluated each of its CIP projects to exclude costs related to correcting existing system deficiencies or upgrading for historical lack of capacity. Only capacity increasing/level of performance costs were used as the basis for the SDC calculation, as reflected in the capital improvement schedules developed by the City. The improvement fee is calculated as a function of the estimated number of projected additional Equivalent Residential Units (expressed in  $\frac{3}{4}$ ” water meter equivalents) for water over the planning horizon. Once the future costs to serve growth have been segregated (i.e., the numerator), they can be divided into the total number of new EDUs that will use the capacity derived from those investments (i.e., the denominator).



# Methodology for the Granting of Credits, Discounts, and Exemptions

## SDC Credits Policy

ORS 223.304 requires that credit be allowed for the construction of a "qualified public improvement" which is required as a condition of development approval, is identified in the Capital Improvement Plan, and either is not located on or contiguous to property that is the subject of development approval or is located on or contiguous to such property and is required to be built larger or with greater capacity than is necessary for the particular development project. The credit for a qualified public improvement may only be applied against an SDC for the same type of improvement and may be granted only for the cost of that portion of an improvement which exceeds the minimum standard facility size or capacity needed to serve the particular project. For multi-phase projects, any excess credit may be applied against SDCs that accrue in subsequent phases of the original development project. In addition to these required credits, the City may, if it so chooses, provide a greater credit, establish a system providing for the transferability of credits, provide a credit for a capital improvement not identified in the Capital Improvement Plan, or provide a share of the cost of an improvement by other means.

The City has adopted a policy for granting SDC credits and has codified this policy in the Independence Municipal Code (IMC) §34.448. The adopted SDC credit policy consists of four (4) items as follows:

- A. A system development charge shall be imposed when a change of use of a parcel or structure occurs, but credit shall be given for the computed system development charge to the extent that prior structures existed and services were established on or after the effective date of the ordinance codified in this chapter. The credit so computed shall not exceed the calculated system development charge. No refund shall be made on account of such credit.
- B. A credit shall be given for the cost of a qualified public improvement associated with a development. If a qualified public improvement is located partially on and partially off the parcel that is the subject of the residential development approval, the credit shall be given only for the cost of the portion of the improvement not located on or wholly contiguous to the property. The credit provided for by this subsection shall be only for the improvement fee charged for the type of improvement being constructed and shall not exceed the improvement fee even if the cost of the capital improvement exceeds the applicable improvement fee.
- C. Applying the methodology adopted by resolution, the City Manager may grant a credit against the public improvement charge, the reimbursement fee, or both, for a capital improvement constructed as part of the development that reduces the development's demand upon existing capital improvements or the need for future capital improvements or that would otherwise have to be constructed at city expense under existing Council policies.
- D. In situations where the amount of credit exceeds the amount of the system development charge, the excess credit is not transferable to another development. It may be transferred to another phase of the original development. Credit shall not be transferable from one development to another.

## SDC Discount Policy

The City, at its sole discretion, may discount the SDC rates by choosing not to charge a reimbursement fee for excess capacity, or by reducing the portion of growth-required improvements to be funded with SDCs. A discount in the SDC rates may also be applied on a pro-rata basis to any identified deficiencies, which

must be funded from sources other than improvement fee SDCs. The portion of growth-required costs to be funded with SDCs must be identified in the CIP. Because discounts reduce SDC revenues, they increase the amounts that must come from other sources, such as user fees or general fund contributions, in order to acquire the facilities identified in the Updated Master Plan(s).

### **Partial and Full SDC Exemption**

The City may exempt certain types of development from the requirement to pay SDCs. Exemptions reduce SDC revenues and, therefore, increase the amounts that must come from other sources, such as user fees and property taxes. As in the case of SDC credits, the City has articulated a policy relative to partial and full SDC exemption. This SDC exemption policy is codified in IMC §34.447, and is as follows:

- A. Structures and uses established and existing on or before July 1, 1991, are exempt from a system development charge to the extent of the structure or use then existing and to the extent of the parcel of land as it is constituted on that date. Structures and uses affected by this subsection shall pay the water or sewer charges pursuant to the terms of this Code upon the receipt of a permit to connect to the water or sewer system.
- B. Additions to single-family dwellings that do not constitute the addition of a dwelling unit, as defined by the state uniform building code, are exempt from all portions of the system development charge.
- C. An alteration, addition, replacement or change in use that does not increase the parcel's or structure's use of the public improvement facility are exempt from all portions of the system development charge.
- D. A project financed by city revenues is exempt from all portions of the system development charge.

## **Water SDCs**

### **Water Capital Improvement Plan**

The principal sources of data for the water system CIP are the 2023 capital improvement plans for water Supply, treatment, storage, transmission, and distribution systems. City Staff have periodically updated these plans for current development conditions. With the assistance of City Staff, the project team has summarized the 2023 water system CIPs for this SDC methodology update. The 2023 water system CIP is shown in Table 3.

Table 3 - 2023 Water System CIP

2023 Water Capital Improvement Plan													
Project Number	Project Source	Project Name	Project Description	Priority Year 2023-2027	Priority Year 2028-2032	Priority Year 2033-2042	Master Plan Priority	Diameter (Inch)	Length (Feet)	SDC Funding Eligible (Y/N)	SDC Share %	2023 Master Plan Cost Est. + Inflation	SDC Eligible Cost
<b>Type S Water Source/Supply Projects</b>													
S-1	WMP	Groundwater Right Development, Permit G-12134	After City receives an extension of time for permit, apply for a permit amendment to add Polk Wells 2, 3, 4 and River Drive as authorized points of appropriation followed by certificating water right.	2023-2027			High	N/A	N/A	No	0%	\$ 10,710	\$ -
S-2	WMP	Groundwater Right Development, Permit G-17868	Water right is only authorized from the Willamette Wellfield. After City receives an extension of time for the permit, apply for a permit amendment add the Polk Wells as add'l authorized point of appropriation followed by certificating the water right.	2023-2027			High	N/A	N/A	No	0%	\$ 10,710	\$ -
S-3	WMP	Groundwater Right Development, Permit G-17750	Certificate prior to 2037 deadline. Water right is for irrigation of sports fields. Complete the water right certificate during the planning period.	2023-2027			High	N/A	N/A	No	0%	\$ 10,710	\$ -
S-4	WMP	Surface Water Right Development, Permit S-54331	Development deadline is 2026. Commence construction activities towards using the permit by the development deadline and prior to requesting a deadline extension from OWRD for this permit. Permit amendment required to divert water from collector well. Amend permit to allow surface water to groundwater transfer for the collector well, which may require a study performed by a Registered Geologist.	2023-2027			High	N/A	N/A	Yes	100%	\$ 21,420	\$ 21,420
S-5	WMP	Polk Wellfield Electrical Improvements	Includes auxiliary power and instrumentation upgrades for Polk Wells 1, 2, 3 and the River Drive Well. Polk Wells 1 and 2 are not connected to the existing generator at this site. All of these wells require improvements for instrumentation and SCADA.	2023-2027			High	N/A	N/A	No	0%	\$ 491,460	\$ -
S-6	WMP	South Wellfield Improvements	Replace yard piping with restrained-joint ductile iron for seismic event. Includes building improvements for weatherization, insulation, enclosing the walls & ceiling with plywood, and heaters. install level transducers in the wells and magnetic flow meters installed in the buildings at the five South Wells and connection of these instruments to the City's SCADA system. Includes a new and larger power service to replace the well building power service.	2023-2027			High	N/A	N/A	No	0%	\$ 917,590	\$ -
S-7	WMP	Recommission South Wells 4 & 5	Prior to placing the wells in service, OHA must review water quality testing results from each well for coliform bacteria, sampled at the wellhead, and for nitrate & PCE, sampled at the entry point. Receive OHA approvals. Performance test wells and perform monitoring.	2023-2027			High	N/A	N/A	No	0%	\$ 16,070	\$ -

Table 3- 2023 Water System CIP (Continued)

2023 Water Capital Improvement Plan													
Project Number	Project Source	Project Name	Project Description	Priority Year 2023-2027	Priority Year 2028-2032	Priority Year 2033-2042	Master Plan Priority	Diameter (Inch)	Length (Feet)	SDC Funding Eligible (Y/N)	SDC Share %	2023 Master Plan Cost Est. + Inflation	SDC Eligible Cost
<b>Type S Water Source/Supply Projects</b>													
S-8	WMP	New Water System Intertie	Design and construct connection at 16th Street & Marigold Drive, 17th Street & Monmouth Street, or another location that will not require purchase of ROW. Facility would consist of site improvements, a mechanical building, yard & building piping, two pumps, instruments, power equipment, and control panels. Monmouth operates at a higher pressure than Independence and Monmouth should cover boosting costs.			2033-2042	Low	N/A	N/A	No	0%	\$ 715,230	\$ -
S-9	WMP	Collector Well Preliminary Engineering	Preliminary engineering for the collector well is necessary for establishing the design criteria and estimating cost. Prepare a conceptual design for a collector well and screened river intake of equal cost. Capacity, operating & maintenance costs, advantages, and disadvantages of the two alternatives should be analyzed to support decision-making. Project includes approval of point of appropriation for water right T-12511 (1994), T12773 (1954), and permit S-54331 (2005).	2023-2027			High	N/A	N/A	Yes	100%	\$ 107,070	\$ 107,070
S-10	WMP	Collector Well & Conveyance Improvements	diameter, 60' deep collector well structure, raw water pump station, and pipeline to convey water from the river to the surface water treatment plant. Pump station will be built	2023-2027			High	N/A	N/A	Yes	100%	\$ 5,985,220	\$ 5,985,220
S-11	WMP	Groundwater Availability Study	Assess groundwater availability within 3 miles of the City's water treatment plants.	2023-2027			High	N/A	N/A	Yes	100%	\$ 26,770	\$ 26,770
<b>Subtotal High Priority Costs</b>												<b>\$ 7,597,730</b>	
<b>Subtotal Medium Priority Costs</b>												<b>\$ -</b>	
<b>Subtotal Low Priority Costs</b>												<b>\$ 715,230</b>	
<b>Subtotal Program Costs</b>												<b>\$ 8,312,960</b>	
<b>Subtotal SDC Eligible Costs</b>												<b>\$ 6,140,480</b>	

Table 3- 2023 Water System CIP (Continued)

2023 Water Capital Improvement Plan													
Project Number	Project Source	Project Name	Project Description	Priority Year 2023-2027	Priority Year 2028-2032	Priority Year 2033-2042	Master Plan Priority	Diameter (Inch)	Length (Feet)	SDC Funding Eligible (Y/N)	SDC Share %	2023 Master Plan Cost Est. + Inflation	SDC Eligible Cost
<b>Type T Treatment Projects</b>													
T-1	WMP	Surface Water Treatment Facility	Project built in phases. Recommend Phase 1 capacity of the plant is 1.5 mgd (approximately 1,040 gpm). New treatment plant facility and site planned for expansion over multiple phases and to ultimately treat & distribute at least 4.2 mgd (6.46 cfs, the total rate of the City's two surface water rights). Phase 1 costs include civil site improvements, water treatment equipment and building, disinfection system, finished water pumps, backwash settling ponds, electrical power and SCADA telemetry. Purchase property for new water treatment facility near south end of city.	2023-2027			High	N/A	N/A	Yes	100%	\$ 20,343,300	\$ 20,343,300
<b>Subtotal High Priority Costs</b>												\$	<b>20,343,300</b>
<b>Subtotal Medium Priority Costs</b>												\$	-
<b>Subtotal Low Priority Costs</b>												\$	-
<b>Subtotal Program Costs</b>												\$	<b>20,343,300</b>
<b>Subtotal SDC Eligible Costs</b>												\$	<b>20,343,300</b>
<b>Type R Reservoir/Storage Projects</b>													
R-1	WMP	Polk Reservoir 1 & WTP Facility Seismic Evaluation	Complete seismic evaluation for Polk Reservoir 1, existing buildings, and equipment at the water treatment plant and booster pump station to verify if they meet current building codes.	2023-2027			High	N/A	N/A	No	0%	\$ 53,540	\$ -
R-2	WMP	Polk Reservoir 2 Seismic Evaluation	Complete seismic evaluation for Polk Reservoir 2, existing buildings, and equipment at the water treatment plant and booster pump station to verify if they meet current building codes.	2023-2027			High	N/A	N/A	No	0%	\$ 42,830	\$ -
R-3	WMP	South Reservoir & WTP Facility Seismic Evaluation	Complete seismic evaluation for South Reservoir 2, existing buildings, and equipment at the water treatment plant and booster pump station to verify if they meet current building codes.	2023-2027			High	N/A	N/A	No	0%	\$ 53,540	\$ -
R-4	WMP	New 2.0-million-gallon Reservoir	Design and construct new 2MG reservoir with the new water treatment plant project and decommission the Monmouth Street Pump Station and Reservoir once new treatment plant is online.	2023-2027			High	N/A	N/A	Yes	64.4%	\$ 4,324,560	\$ 2,785,017
<b>Subtotal High Priority Costs</b>												\$	<b>4,474,470</b>
<b>Subtotal Medium Priority Costs</b>												\$	-
<b>Subtotal Low Priority Costs</b>												\$	-
<b>Subtotal Program Costs</b>												\$	<b>4,474,470</b>
<b>Subtotal SDC Eligible Costs</b>												\$	<b>2,785,017</b>

Table 3- 2023 Water System CIP (Continued)

2023 Water Capital Improvement Plan													
Project Number	Project Source	Project Name	Project Description	Priority Year 2023-2027	Priority Year 2028-2032	Priority Year 2033-2042	Master Plan Priority	Diameter (Inch)	Length (Feet)	SDC Funding Eligible (Y/N)	SDC Share %	2023 Master Plan Cost Est. + Inflation	SDC Eligible Cost
<b>Type A Distribution-Fire Flow Projects</b>													
A-1	WMP	Wild Rose Ct Waterline Replacement	Replace 6" PVC waterline with 8" PVC waterline from Northgate to north cul-de-sac.		2028-2032		Medium	8	275	Yes	43.75%	\$ 193,800	\$ 84,788
A-2	WMP	12th Street & Dawn Ct Waterline Replacement	Replace 6" PVC waterline with 8" PVC waterline from Dawn Ct cul-de-sac to 12th St cul-de-cac south.		2028-2032		Medium	8	900	Yes	43.75%	\$ 460,410	\$ 201,429
A-3	WMP	B Street & Rhoda Ln Waterline Replacement	Replace 4" steel and 6" AC waterline with 8" PVC waterline through loop.		2028-2032		Medium	8	1600	Yes	75.00%	\$ 680,970	\$ 510,728
A-4	WMP	17th Street Waterline Replacement	Replace 6" PVC waterline with 8" PVC waterline from Monmouth to north end.		2028-2032		Medium	8	1600	Yes	43.75%	\$ 473,250	\$ 207,047
A-5	WMP	16th Street & Talmadge Road Waterline Replacement	Replace 6" AC & PVC waterline with 12" PVC waterline on Talmadge and 6" PVC to 8" PVC on 16th.		2028-2032		Medium	8	1325	Yes	68.75%	\$ 572,830	\$ 393,821
A-6	WMP	9th Street Waterline Replacement	Replace 6" AC waterline with 8" PVC waterline from Monmouth to north end.		2028-2032		Medium	8	750	Yes	43.75%	\$ 356,550	\$ 155,991
A-7	WMP	B Street & 4th Street Waterline Replacement	Replace 4" PVC with 8" PVC waterline on B Street from 4th to 5th.	2023-2027			High	8	350	Yes	75.00%	\$ 164,890	\$ 123,668
A-8	WMP	Maple Ct Waterline Replacement	Replace 6" AC waterline with 8" PVC waterline from Maple Dr to west cul-de-sac.		2028-2032		Medium	8	675	Yes	43.75%	\$ 304,080	\$ 133,035
A-9	WMP	Pine Ct Waterline Replacement	Replace 6" AC waterline with 8" PVC waterline from Spruce Ave to south cul-de-sac.		2028-2032		Medium	8	475	Yes	43.75%	\$ 220,570	\$ 96,499
A-10	WMP	Evergreen Dr Waterline Replacement	Replace 6" AC waterline with 8" PVC waterline from south connection to Evergreen Dr.		2028-2032		Medium	8	625	Yes	43.75%	\$ 292,310	\$ 127,886
												<b>Subtotal High Priority Costs</b>	<b>\$ 164,890</b>
												<b>Subtotal Medium Priority Costs</b>	<b>\$ 3,554,770</b>
												<b>Subtotal Low Priority Costs</b>	<b>\$ -</b>
												<b>Subtotal Program Costs</b>	<b>\$ 3,719,660</b>
												<b>Subtotal SDC Eligible Costs</b>	<b>\$ 2,034,890</b>

Table 3- 2023 Water System CIP (Continued)

2023 Water Capital Improvement Plan													
Project Number	Project Source	Project Name	Project Description	Priority Year 2023-2027	Priority Year 2028-2032	Priority Year 2033-2042	Master Plan Priority	Diameter (Inch)	Length (Feet)	SDC Funding Eligible (Y/N)	SDC Share %	2023 Master Plan Cost Est. + Inflation	SDC Eligible Cost
<b>Type B Distribution-End of Service Life Projects</b>													
B-1	WMP	Gun Club Road Waterline Replacement	Replace existing 8" waterline with 12" waterline for transmission purposes.		2028-2032		Medium	12	2900	Yes	75%	\$ 1,448,660	\$ 1,086,495
B-2	WMP	D Street at 12th St Waterline Replacement	Replace existing 4" waterline with 8" waterline.	2023-2027			High	8	550	Yes	75%	\$ 270,890	\$ 203,168
B-3	WMP	7th, D & 9th Streets Waterline Replacement	Replace existing 6" waterline with 8" waterline.	2023-2027			High	8	1750	Yes	43.75%	\$ 743,070	\$ 325,093
B-4	WMP	D Street at 2nd St Steel Waterline Replacement	Replace existing 8" waterline with 8" waterline.	2023-2027			High	8	425	No	0%	\$ 202,370	\$ -
B-5	WMP	E Street from 9th to 13th Waterline Replacement	Replace existing 6" waterline with 12" waterline.	2023-2027			High	12	2300	Yes	75%	\$ 1,081,410	\$ 811,058
B-6	WMP	F Street from 9th to 3rd St Waterline Replacement	Replace existing 6" waterline with 12" waterline.	2023-2027			High	12	2000	Yes	75%	\$ 996,830	\$ 747,623
B-7	WMP	5th St from E to F Streets Waterline Replacement	Replace existing 6" waterline with 8" waterline.		2028-2032		Medium	8	325	Yes	43.75%	\$ 171,320	\$ 74,953
B-8	WMP	3rd St from F to I Streets Waterline Replacement	Replace existing 8" waterline with 8" waterline.		2028-2032		Medium	8	1000	No	0%	\$ 438,990	\$ -
B-9	WMP	3rd Street & E Street Waterline Replacement	Replace existing 6" waterline with 12" waterline.	2023-2027			High	12	1075	Yes	75%	\$ 512,870	\$ 384,653
B-10	WMP	I & H Streets Waterline Replacement	Replace existing 4" waterline with 8" waterline.	2023-2027			High	8	1550	Yes	75%	\$ 728,080	\$ 546,060

Table 3- 2023 Water System CIP (Continued)

2023 Water Capital Improvement Plan													
Project Number	Project Source	Project Name	Project Description	Priority Year 2023-2027	Priority Year 2028-2032	Priority Year 2033-2042	Master Plan Priority	Diameter (Inch)	Length (Feet)	SDC Funding Eligible (Y/N)	SDC Share %	2023 Master Plan Cost Est. + Inflation	SDC Eligible Cost
B-11	WMP	River Oak Rd Waterline Replacement	Replace existing 6" waterline with 8" waterline.		2028-2032		Medium	8	1000	Yes	43.75%	\$ 536,430	\$ 234,688
B-12	WMP	Corvallis Road Steel Waterline Replacement	Replace existing 2" waterline with 12" waterline.	2023-2027			High	12	1100	Yes	88.89%	\$ 458,260	\$ 407,347
B-13	WMP	Polk & Walnut Streets Waterline Replacement	Replace existing 8" waterline with 8" waterline.		2028-2032		Medium	8	2375	No	0%	\$ 952,930	\$ -
B-14	WMP	Log Cabin Waterline Replacement	Replace existing 4" waterline with 8" waterline.		2028-2032		Medium	8	1300	Yes	75%	\$ 710,950	\$ 533,213
B-15	WMP	Main Street Waterline Replacement	Replace existing 6" waterline with 12" waterline.		2028-2032		Medium	12	2000	Yes	75%	\$ 1,124,240	\$ 843,180
B-16	WMP	River Drive Waterline Replacement #1	Replace existing 4" waterline with 8" waterline.		2028-2032		Medium	8	1125	Yes	75%	\$ 433,640	\$ 325,230
B-17	WMP	Walnut, Ash & Log Cabin Streets Waterline Replacement	Replace existing 4" waterline with 8" waterline.	2023-2027			High	8	3950	Yes	75%	\$ 1,506,480	\$ 1,129,860
B-18	WMP	Monmouth St Waterline Replacement	Replace existing 4" waterline with 8" waterline.	2023-2027			High	8	1525	Yes	75%	\$ 865,130	\$ 648,848
B-19	WMP	Copper Water Service Replacements	Replace all copper services lines with PEX. Replace all saddle, corporations, curb stops, and customer service valves to current standards.	2023-2027			High	N/A	N/A	No	0%	\$ 6,424,200	\$ -
B-20	WMP	Water Meter Replacements	Replace all water meters at end of life. Replace annually to allow for future rotation on annual basis.	2023-2027	2028-2032	2033-2042	High	N/A	N/A	No	0%	\$ 2,312,720	\$ -
												<b>Subtotal High Priority Costs</b>	<b>\$ 13,789,590</b>
												<b>Subtotal Medium Priority Costs</b>	<b>\$ 8,129,880</b>
												<b>Subtotal Low Priority Costs</b>	<b>\$ -</b>
												<b>Subtotal Program Costs</b>	<b>\$ 21,919,470</b>
												<b>Subtotal SDC Eligible Costs</b>	<b>\$ 8,301,466</b>



Table 3- 2023 Water System CIP (Continued)

2023 Water Capital Improvement Plan													
Project Number	Project Source	Project Name	Project Description	Priority Year 2023-2027	Priority Year 2028-2032	Priority Year 2033-2042	Master Plan Priority	Diameter (Inch)	Length (Feet)	SDC Funding Eligible (Y/N)	SDC Share %	2023 Master Plan Cost Est. + Inflation	SDC Eligible Cost
<b>Type C Distribution-Design Standards Improvement Projects</b>													
C-1	WMP	Hyacinth St Waterline Replacement	Replace approximately 625 LF of 6" PVC waterline with 8" waterline			2033-2042	Low	8	625	No	0%	\$ 349,050	\$ -
C-2	WMP	Williams St Waterline Replacement	Replace approximately 1,375 LF of 6" AC waterline with 8" waterline		2028-2032		Medium	8	1375	No	0%	\$ 599,600	\$ -
C-3	WMP	13th St Waterline Replacement	Replace approximately 950 LF of 6" PVC waterline with 8" waterline			2033-2042	Low	8	950	No	0%	\$ 449,700	\$ -
C-4	WMP	11th & 12th St Waterline Replacements	Replace approximately 1,325 LF of 6" PVC waterline with 8" waterline			2033-2042	Low	8	1325	No	0%	\$ 595,310	\$ -
C-5	WMP	Randall Way Waterline Replacements	Replace approximately 700 LF of 6" AC and 700 LF of 6" PVC waterline with 8" waterline		2028-2032		Medium	8	1400	No	0%	\$ 602,810	\$ -
C-6	WMP	6th & 7th St Waterline Replacements	Replace approximately 1,475 LF of 6" PVC waterline with 8" waterline			2033-2042	Low	8	1475	No	0%	\$ 700,240	\$ -
C-7	WMP	Freedom Estates Subdivision Waterline Replacements	Replace approximately 4,100 LF of 6" PVC waterline with 8" waterline			2033-2042	Low	8	4100	No	0%	\$ 1,750,600	\$ -
C-8	WMP	I St Waterline Replacement	Replace approximately 775 LF of 6" AC waterline with 8" waterline		2028-2032		Medium	8	775	No	0%	\$ 300,870	\$ -
C-9	WMP	5th & 6th St Waterline Replacements	Replace approximately 1,475 LF of 6" PVC waterline with 8" waterline			2033-2042	Low	8	1475	No	0%	\$ 587,820	\$ -
C-10	WMP	6th & 7th St Waterline Replacements	Replace approximately 1,875 LF of 6" PVC waterline with 8" waterline			2033-2042	Low	8	1875	No	0%	\$ 798,750	\$ -
C-11	WMP	A & B St Waterline Replacements	Replace approximately 2,225 LF of 6" PVC waterline with 8" waterline			2033-2042	Low	8	2225	No	0%	\$ 928,300	\$ -
C-12	WMP	2nd & B St Waterline Replacements	Replace approximately 1,025 LF of 6" PVC waterline with 8" waterline			2033-2042	Low	8	1025	No	0%	\$ 430,430	\$ -
C-13	WMP	River Drive Waterline Replacement #2	Replace approximately 600 LF of 6" PVC waterline with 8" waterline			2033-2042	Low	8	600	No	0%	\$ 259,110	\$ -
C-14	WMP	Independence Airpark Waterline Replacements	Replace approximately 7,000 LF of 6" AC and 7,300 LF of 6" PVC waterline with 8" waterline		2028-2032		Medium	8	14300	No	0%	\$ 5,535,520	\$ -
												<b>Subtotal High Priority Costs</b>	\$ -
												<b>Subtotal Medium Priority Costs</b>	\$ 7,038,800
												<b>Subtotal Low Priority Costs</b>	\$ 6,849,310
												<b>Subtotal Program Costs</b>	\$ 13,888,110
												<b>Subtotal SDC Eligible Costs</b>	\$ -

Table 3- 2023 Water System CIP (Continued)

2023 Water Capital Improvement Plan													
Project Number	Project Source	Project Name	Project Description	Priority Year 2023-2027	Priority Year 2028-2032	Priority Year 2033-2042	Master Plan Priority	Diameter (Inch)	Length (Feet)	SDC Funding Eligible (Y/N)	SDC Share %	2023 Master Plan Cost Est. + Inflation	SDC Eligible Cost
<b>Type D Undeveloped Area Projects</b>													
D-1	WMP	Airport Residential & Industrial Zone Waterlines	Construct approximately 2,075 LF of 12" waterline on Gun Club Rd and Hoffman Road. Construct approximately 9,800 LF of 8" waterline in undeveloped property.			2033-2042	Low	Varies	11900	Yes	9.7%	\$ 4,912,380	\$ 475,872
D-2	WMP	Southwest Area Residential Waterlines - North	Construct approximately 6,500 LF of 12" waterline on Talmadge Rd, I St, 13th St, and Chestnut St. Construct approximately 4800 LF of 8" waterline in undeveloped property.			2033-2042	Low	Varies	11300	Yes	32.0%	\$ 9,610,610	\$ 3,071,237
D-3	WMP	Southwest Area Residential Waterlines - South	Construct approximately 3,200 LF of 12" waterline on Gun Club Rd and Hoffman Road. Construct approximately 7,400 LF of 8" waterline in undeveloped property.			2033-2042	Low	Varies	10600	Yes	16.8%	\$ 8,685,520	\$ 1,456,691
D-4	WMP	Mt. Fir Rd Waterline Replacement from Washington to 6th St	Replace existing 8" waterline with 12" waterline for transmission purposes.			2033-2042	Low	12	750	Yes	55.56%	\$ 387,600	\$ 215,351
D-5	WMP	Mt. Fir Rd Waterline	Construct 12" transmission main from 6th St across RR tracks to Corvallis Rd.			2033-2042	Low	12	2550	Yes	100.00%	\$ 799,820	\$ 799,820
D-6	WMP	Corvallis Road Waterline	Construct 12" transmission main from River Oak Rd to Mt Fir Ave.	2023-2027			High	12	1075	Yes	100.00%	\$ 379,030	\$ 379,030
D-7	WMP	Mt. Fir & Corvallis Road Residential Waterlines	Construct 8" waterlines in undeveloped property.			2033-2042	Low	8	3700	No	0%	\$ 2,594,310	\$ -
												<b>Subtotal High Priority Costs</b>	<b>\$ 379,030</b>
												<b>Subtotal Medium Priority Costs</b>	<b>\$ -</b>
												<b>Subtotal Low Priority Costs</b>	<b>\$ 26,990,240</b>
												<b>Subtotal Program Costs</b>	<b>\$ 27,369,270</b>
												<b>Subtotal SDC Eligible Costs</b>	<b>\$ 6,398,001</b>
<b>Type M Miscellaneous Projects</b>													
		Water Management Conservation Plan Update	Update the water management and conservation plan strategies and develop conservation code language.	2023-2027			High	N/A	N/A	No	0%	\$ 5,000	\$ -
		Corrosion and pH Control for Polk Wellfield	Develop treatment alternatives and implement treatment system to address pH and other corrosion controls.	2023-2027			High	N/A	N/A	No	0%	\$ 288,560	\$ -
		New Polk Well #4	Perform well testing, design, and construction of drinking water well.	2023-2027			High	N/A	N/A	Yes	100%	\$ 530,000	\$ 530,000
		Water System Development Charge Methodology and User Fee Update	Develop and methodology update for water system development charges and user fee update based on updated water master plan.	2023-2027			High	N/A	N/A	Yes	50%	\$ 53,540	\$ 26,770
M-1	WMP	Taste & Odor Study	Conduct study to monitor potential constituents that cause taste and odor issues in the distribution system and recommend corrective actions.		2028-2032		Medium	N/A	N/A	No	0%	\$ 53,540	\$ -
M-2	WMP	Water Master Plan Update	Update water master plan, system development charges, and water rates based on new priorities.		2028-2032		Medium	N/A	N/A	Yes	100%	\$ 321,210	\$ 321,210
												<b>Subtotal High Priority Costs</b>	<b>\$ 877,100</b>
												<b>Subtotal Medium Priority Costs</b>	<b>\$ 374,750</b>
												<b>Subtotal Low Priority Costs</b>	<b>\$ -</b>
												<b>Subtotal Program Costs</b>	<b>\$ 1,251,850</b>
												<b>Subtotal SDC Eligible Costs</b>	<b>\$ 877,980</b>

Table 3- 2023 Water System CIP (Continued)

2023 Water Capital Improvement Plan													
Project Number	Project Source	Project Name	Project Description	Priority Year 2023-2027	Priority Year 2028-2032	Priority Year 2033-2042	Master Plan Priority	Diameter (Inch)	Length (Feet)	SDC Funding Eligible (Y/N)	SDC Share %	2023 Master Plan Cost Est. + Inflation	SDC Eligible Cost
<b>Type Program Recurring Annual Program Projects</b>													
P-1	WMP	Polk Booster Pump Station Electrical Improvements	Replace pump controls, pumps, upgrade to VFD's, upgrade telemetry, replace diesel pump with electrical pump, new power service, new flow meter, new generator, and building improvements.	2023-2027			High	N/A	N/A	No	0%	\$ 912,240	\$ -
P-2	WMP	Polk Water & Wastewater Facility Fencing Improvements	Install security fencing to secure entire site.		2028-2032		Medium	N/A	N/A	No	0%	\$ 392,950	\$ -
P-3	WMP	South Booster Pump Station Electrical Improvements	Replace pump controls, transfer switch, new power service, and new flow meter.	2023-2027			High	N/A	N/A	No	0%	\$ 89,940	\$ -
P-4	WMP	Willamette Water Treatment Plant Booster Pump Station (See Project T-1)	Construct new pump station with one jockey pump and two fire demand pumps.	2023-2027			High	N/A	N/A	Yes	100%		
P-5	WMP	Decommission Monmouth Street Pump Station & Reservoir	Once the new treatment plant, reservoir, pump station and supply lines are in place, remove equipment, demolish and remove the building, reservoir and foundation. The reservoir is coated with lead-based paint.			2033-2042	Low	N/A	N/A	No	0%	\$ 214,140	\$ -
Program 1	WMP	Annual Water Audit (Non-metered Water Use Tracking System)	Perform annual audit and replace filter backwash flow meters at the Polk Water Treatment Plant with magnetic meters.	2023-2027	2028-2032	2033-2042	High	N/A	N/A	No	0%	\$ 42,830	\$ -
Program 2	WMP	Leak Detection and Repair Program	Conduct annual leak detection and repairs.	2023-2027	2028-2032	2033-2042	High	N/A	N/A	No	0%	\$ 1,177,770	\$ -
Program 3	WMP	Water Management & Conservation Plan Update	Update the water management and conservation plan at 5 year intervals.	2023-2027	2028-2032	2033-2042	High	N/A	N/A	No	0%	\$ 128,490	\$ -
Program 4	WMP	Meter Replacement Program	Replace meters at end of useful life	2023-2027		2033-2042	High	N/A	N/A	No	0%	\$ 1,445,450	
Program 5	WMP	Annual Waterline Flushing Program	Flush waterlines from supply to end of line in 5-year intervals to remove sediment buildup in lines.	2023-2027	2028-2032	2033-2042	High	N/A	N/A	No	0%	\$ 21,420	\$ -
Program 6	WMP	Valve Cycling Program	Cycle all main line valves and fire hydrants in 5-year intervals. Recommend pairing valve cycling with waterline flushing program.	2023-2027	2028-2032	2033-2042	High	N/A	N/A	No	0%	\$ 21,420	\$ -
Program 7	WMP	Fire Hydrant Maintenance/Replacement Program	Perform maintenance replacement of fire hydrants in 5-year intervals. Recommend pairing valve cycling .	2023-2027	2028-2032	2033-2042	High	N/A	N/A	No	0%	\$ 214,140	\$ -
Program 8	WMP	Reservoir Inspection, Cleaning, and Maintenance Program	Inspect, clean and repair reservoirs in 5-year intervals.	2023-2027	2028-2032	2033-2042	High	N/A	N/A	No	0%	\$ 48,190	\$ -
												<b>Subtotal High Priority Costs</b>	<b>\$ 4,101,890</b>
												<b>Subtotal Medium Priority Costs</b>	<b>\$ 392,950</b>
												<b>Subtotal Low Priority Costs</b>	<b>\$ 214,140</b>
												<b>Subtotal Program Costs</b>	<b>\$ 4,708,980</b>
												<b>Subtotal SDC Eligible Costs</b>	<b>\$ -</b>
<b>Total Project Costs</b>													
												<b>TOTAL High Priority Costs</b>	<b>\$ 51,728,000</b>
												<b>TOTAL Medium Priority Costs</b>	<b>\$ 19,491,150</b>
												<b>TOTAL Low Priority Costs</b>	<b>\$ 34,768,920</b>
												<b>TOTAL Program Costs</b>	<b>\$ 105,988,070</b>
												<b>TOTAL SDC Eligible Costs</b>	<b>\$ 46,881,134</b>

## Water Customers Current and Future Demographics

### Existing Water Demand and Population Growth

Current Utility water demands are based on historical customer billing records, and actual water meters in service as of September, 2023. Projected demands are estimated based on an approximate population growth rate of 2.58 percent per year within the established limits of the City's service area. This annual population growth factor is based on the population forecasts contained in the City's adopted 2023 Water Master Plan (Section 5.3.3 – Future Population Projections).

### Estimated Demand per Equivalent 5/8" or 3/4" Water Meter

The City principally serves single-family residential customers and to a lesser extent, small commercial and industrial customers. Single-family residential water services generally have a consistent daily pattern of water use whereas water demands for multifamily residences, commercial and industrial users may vary significantly from service to service depending on the number of multifamily units per service or the type of commercial enterprise. When projecting future water demands based on population change, the water needs of nonresidential and multi-family residential customers are represented by comparing the water use volume at these services to the average single-family residential water service. A method to estimate this relationship is to calculate "equivalent dwelling units (EDUs)." In the case of the City, the standard residential unit of demand is the rated capacity (in gallons per minute) of the 5/8" x 3/4" water meter. As of September, 2023, the City had 2,690 active water meters in service, 2,549 of which were 5/8" x 3/4" meters serving single family residential customers. In other words, roughly 95% of all active water services were assigned to the single-family residential customer class. The process for calculating equivalent 5/8" x 3/4" meters is shown below in Table 4.

Table 4 – Estimated ¾" Equivalent Meters in Service as of September, 2023

Meter Size	Total Meters In Service	AWWA Rated Flow (GPM)*	Flow Factor Equivalence	5/8" Meter Equivalents
<i>Small/residential meters:</i>				
0.625" x 0.75" - Displacement or Multi-jet	-	30	1.00	-
0.75" x 0.75" - Displacement or Multi-jet	2,549	30	1.00	2,549
1.00 inch - Displacement or Multi-jet	64	50	1.67	107
1.50 inch - Displacement or Class I Turbine	33	100	3.33	110
2.00 inch - Displacement or Class I & II Turbine	30	160	5.33	160
<i>Large/commercial &amp; industrial meters:</i>				
<i>3 inch meters:</i>				
Displacement	-	300	10.00	-
Compound	8	320	10.67	85
Class I & II turbine	-	350	11.67	-
<i>4 inch meters:</i>				
Displacement or Compound	5	500	16.67	83
Class I turbine	-	600	20.00	-
<i>6 inch meters:</i>				
Displacement or Compound	1	1000	33.33	33
Class I turbine	-	1250	41.67	-
<i>8 inch meters:</i>				
Compound	-	1600	53.33	-
Class I turbine	-	1800	60.00	-
<i>10 inch meters:</i>				
Compound	-	2300	76.67	-
Class I turbine	-	2900	96.67	-
Total	2,690			3,128

\* - AWWA Manual of Practice M6; Water Meters - Selection, Installation, Testing, and Maintenance; Table 2-2 Total Quantities Registered per Month by Meters Operating at Varying Percentages of Maximum Capacity

## Projected Demands

The planning horizon that was used for the City’s 2023 adopted water facilities CIP is 20 years, through the year 2043. That is the forecast horizon that is used for the water SDC update. In the 2023 Master Plan capital planning effort, an estimated number of EDUs per acre for each land use type was established based on (then) current water demands by customer class and total developed land area by land use type. Land use type is analogous to customer class, which is to say the land use or zoning of a particular property reflects the type of water service, such as residential or commercial, provided to that property. The estimated number of potential EDUs per acre was applied to developable land within the existing water service area to estimate water demand.

For this SDC update, the project team did not use this strategy to forecast future water demand based on land use. With the benefit of actual meters in service, and a population growth forecast that is predicated on existing growth trends for the City a forecast of future equivalent 5/8" x ¾" meters was developed. Based upon these decision rules, the forecast of equivalent meters in use for this water SDC update are shown below in Table 5.

Table 5 – Forecast of Equivalent 5/8" x 3/4" Meters for the 2023 Water SDC Update Study

	2020	2022	2023	2043	2045	Growth	CAGR <sup>1</sup>
Population estimate per U.S. Department of the Census	9,833	10,255					
Population estimate per PSU Coordinated Pop Forecast <sup>2</sup>	9,851	10,366	10,634	17,709	18,636	8,785	2.5829%
Total number of 5/8" or 3/4" meter equivalents <sup>3</sup>			3,128	5,209		2,081	2.5829%

<sup>1</sup> Compound Annual Growth Rate

<sup>2</sup> Source: City of Independence Water System Master Plan; March 28, 2023; Westech Engineering, Inc.; Adopted by the Independence City Council via Ordinance No. 1606

<sup>3</sup> Source: City of Independence Water utility billing system records

## Reimbursement Fee Calculations

As discussed earlier in this report, the reimbursement fee represents a buy-in to the cost, or value, of infrastructure capacity within the existing system. In theory, this should be a simple calculation. Simply go to the Utility’s balance sheet, find the book value of assets in service, and divide that cost by the number of forecasted new connections to the water system. That is a simple calculation, and it is wrong. In order to determine an equitable reimbursement, we have to account for some key issues of rate equity;

- First, the cost of the system to the City’s existing customers may be far less than the total plant-in-service value. This is due to the fact that elements of the existing system may have been contributed, whether from developers, governmental grants, and other sources.
- Second, the value of the existing system to a new customer is less than the value to an existing customer, since the new customer must also pay, through an improvement fee, for expansion of some portions of the system.
- Third, the accounting treatment of asset costs generally has no relationship to the capacity of an asset to serve growth. In the absence of a detailed asset by asset analysis detailed in the balance sheet (or fixed asset schedule), a method has to be used to allocate cost to existing and future users of the asset. Generally, it is industry practice to allocate the cost of existing facilities between used and available capacity proportionally based on the forecasted population growth as converted to equivalent dwelling units (i.e., equivalent 3/4" meters) over the planning period.
- Fourth, the Oregon SDC statute has strict limitations on what type of assets can be included in the basis of the reimbursement fee. ORS 223.299 specifically states that a “capital improvement” does not include costs of the operation or routine maintenance of capital improvements. This means the assets on the balance sheet such as certain vehicles and equipment used for heavy repair and maintenance of infrastructure cannot be included in the basis of the reimbursement fee.

For this water SDC methodology update, the following discrete calculation steps were followed to arrive at the recommended water reimbursement fee.

- Step 1: Calculate the original cost of water fixed assets in service. From this starting point, eliminate any assets that do not conform to the ORS 223.299 definition of a capital improvement. This results in the **adjusted original cost of water fixed assets**.
- Step 2: Subtract from the adjusted original cost of water fixed assets in service the accumulated depreciation of those fixed assets. This arrives at the **modified book value of water fixed assets in service**.
- Step 3: Subtract from the modified book value of water assets in service any grant funding or contributed capital. This arrives at the **modified book value of water fixed assets in service net of grants and contributed capital**.
- Step 4: Subtract from the modified book value of water fixed assets in service net of grants and contributed capital any principal outstanding on long term debt used to finance those assets. This arrives a **gross water reimbursement fee basis**.
- Step 5: Subtract from the gross water reimbursement fee basis the fund balance held in the Water Reimbursement SDC fund (if available). This arrives at the **net water reimbursement fee basis**.
- Step 6: Divide the net water reimbursement fee basis by the sum of existing and future EDUs to arrive at the **unit net reimbursement fee**.

The actual data that was used to calculate the total water reimbursement fee is shown below in Table 6.

Table 6 - Calculation of the Water Reimbursement Fee

Utility Plant-in-Service (original cost): <sup>1</sup>	
Intangible Plant	860,893
Land	112,949
Facilities	593,704
Equipment <sup>2</sup>	eliminated
Plant and System	8,387,926
Vehicles <sup>2</sup>	<u>eliminated</u>
Total Utility Plant-in-Service	9,955,472
Accumulated depreciation <sup>1</sup>	
Intangible Plant	-
Land	-
Facilities	219,648
Equipment <sup>2</sup>	eliminated
Plant and System	3,714,079
Vehicles <sup>2</sup>	<u>eliminated</u>
Total accumulated depreciation	3,933,727
Book value of water utility plant-in-service @ June 30, 2023	6,021,745
Eliminating entries:	
Principal outstanding on bonds, notes, and loans payable <sup>3</sup>	
2016A Full Faith & Credit water bond	960,000
2018 Chase Bank senior water rights loan	505,766
Developer Contributions	-
Grants, net of amortization	<u>-</u>
	1,465,766
Net basis in utility plant-in-service available to serve future customers	\$ 4,555,979
Estimated existing and future wastewater treatment EDUs	5,209
Calculated reimbursement fee - \$ per treatment EDU	<u>\$ 875</u>

<sup>1</sup> Source: Independence Accounting Summary Report - Capitalized Assets as of June 30, 2023

<sup>2</sup> ORS 223.299 specifically states that a “capital improvement” does not include costs of the operation or routine maintenance of capital improvements. This means the assets on the balance sheet such as certain vehicles and equipment used for heavy repair and maintenance of infrastructure cannot be included in the basis of the reimbursement fee.

<sup>3</sup> Source: City of Independence Annual Comprehensive Financial Report for the fiscal year ended June 30, 2022; page 46.



## Improvement Fee Calculations

The calculation of the water improvement fee is more streamlined than the process used to calculate the water reimbursement fee. This study continues to use the improvements-driven method and has relied on the 2023 water system capital improvement plan. Under this methodology, only three steps are required to arrive at the improvement fee. These steps are:

- Step 1: Accumulate the future cost of planned improvements needed to serve growth. This arrives at **the gross improvement fee basis**.
- Step 2: Subtract from the gross improvement fee basis the fund balance held in the Water Improvement SDC Fund. This arrives at **the net water improvement fee basis**.
- Step 3: Divide the net water improvement fee basis by the forecasted number of growth EDUs over the planning period. This arrives at **the total water improvement fee**.

The actual data that was used to calculate the total water improvement fee is shown below in Table 7.

Table 7 - Calculation of the Water Improvement Fee

Line Item Description	Total Cost	SDC Ineligible	SDC Eligible
Type S Water Source/Supply Projects	\$ 8,312,960	\$ 2,172,480	\$ 6,140,480
Type T Treatment Projects	20,343,300	-	20,343,300
Type R Reservoir/Storage Projects	4,474,470	1,689,453	2,785,017
Type A Distribution-Fire Flow Projects	3,719,660	1,684,770	2,034,890
Type B Distribution-End of Service Life Projects	21,919,470	13,618,004	8,301,466
Type C Distribution-Design Standards Improvement Projects	13,888,110	13,888,110	-
Type D Undeveloped Area Projects	27,369,270	20,971,269	6,398,001
Type M Miscellaneous Projects	1,251,850	373,870	877,980
Type Program Recurring Annual Program Projects	<u>4,708,980</u>	<u>4,708,980</u>	-
Total SDC model	\$ 105,988,070	\$ 59,106,936	\$ 46,881,134
Total Improvement Fee Eligible Costs for Future System Improvements			\$ 46,881,134
less: Water improvement SDC Fund balance as of June 30, 2023			<u>205,375</u>
Adjusted Improvement Fee Eligible Costs for Future System Improvements			\$46,675,759
Total Growth in 3/4" Meter Equivalents			2,081
Calculated Water Improvement Fee SDC per Meter Equivalent			<u>\$22,431</u>

## Water SDC Model Summary

The 2023 water SDC methodology update was done in accordance with Independence Municipal Code Chapter 34, and with the benefit of adopted capital improvement plans and plan updates for water services. We recommend the City update the SDC charge and methodology to reflect the current capital improvement program. A comparison of the proposed and current water SDCs for the average single-family residential customer is shown below in Table 8.

Table 8 - Proposed and Current Water SDCs for a 3/4" Meter

Water SDC Components	Proposed	Current	Difference
Reimbursement fee	875	-	875
Improvement fee	22,431	3,149	19,282
Administration fee at 5%	1,165	158	1,007
Total water SDC	\$ 24,471	\$ 3,307	\$ 21,164

For water meters larger than 3/4," the schedule of water SDC uses the same flow factors that were developed for the water SDCs (i.e., AWWA standards for displacement and compound meters). The complete proposed schedule of water SDCs by potential meter size are shown in Table 9.

Table 9 - Proposed Schedule of Water SDCs by Potential Water Meter Size

Meter Size	AWWA Rated Flow (GPM)*	Flow Factor Equivalence	Proposed Schedule of Water SDCs			Total
			Reimbursement	Improvement	Compliance	
<i>Small/residential meters:</i>						
0.625" x 0.75" - Displacement or Multi-jet	30	1.00	\$ 875	\$ 22,431	\$ 1,165	\$ 24,471
0.75"x 0.75" - Displacement or Multi-jet	30	1.00	875	22,431	1,165	24,471
1.00 inch - Displacement or Multi-jet	50	1.67	1,458	37,385	1,942	40,785
1.50 inch - Displacement or Class I Turbine	100	3.33	2,916	74,770	3,883	81,569
2.00 inch - Displacement or Class I & II Turbine	160	5.33	4,665	119,632	6,213	130,510
<i>Large/commercial &amp; industrial meters:</i>						
<i>3 inch meters:</i>						
Displacement	300	10.00	8,747	224,310	11,650	244,707
compound	320	10.67	9,330	239,264	12,427	261,021
Class I & II turbine	350	11.67	10,205	261,695	13,592	285,492
<i>4 inch meters:</i>						
Displacement or Compound	500	16.67	14,578	373,850	19,417	407,845
Class I turbine	600	20.00	17,494	448,620	23,300	489,414
<i>6 inch meters:</i>						
Displacement or Compound	1000	33.33	29,157	747,700	38,833	815,690
Class I turbine	1250	41.67	36,446	934,625	48,542	1,019,613
<i>8 inch meters:</i>						
Compound	1600	53.33	46,651	1,196,320	62,133	1,305,104
Class I turbine	1800	60.00	52,483	1,345,860	69,900	1,468,243
<i>10 inch meters:</i>						
Compound	2300	76.67	67,061	1,719,710	89,317	1,876,088
Class I turbine	2900	96.67	84,555	2,168,330	112,617	2,365,502

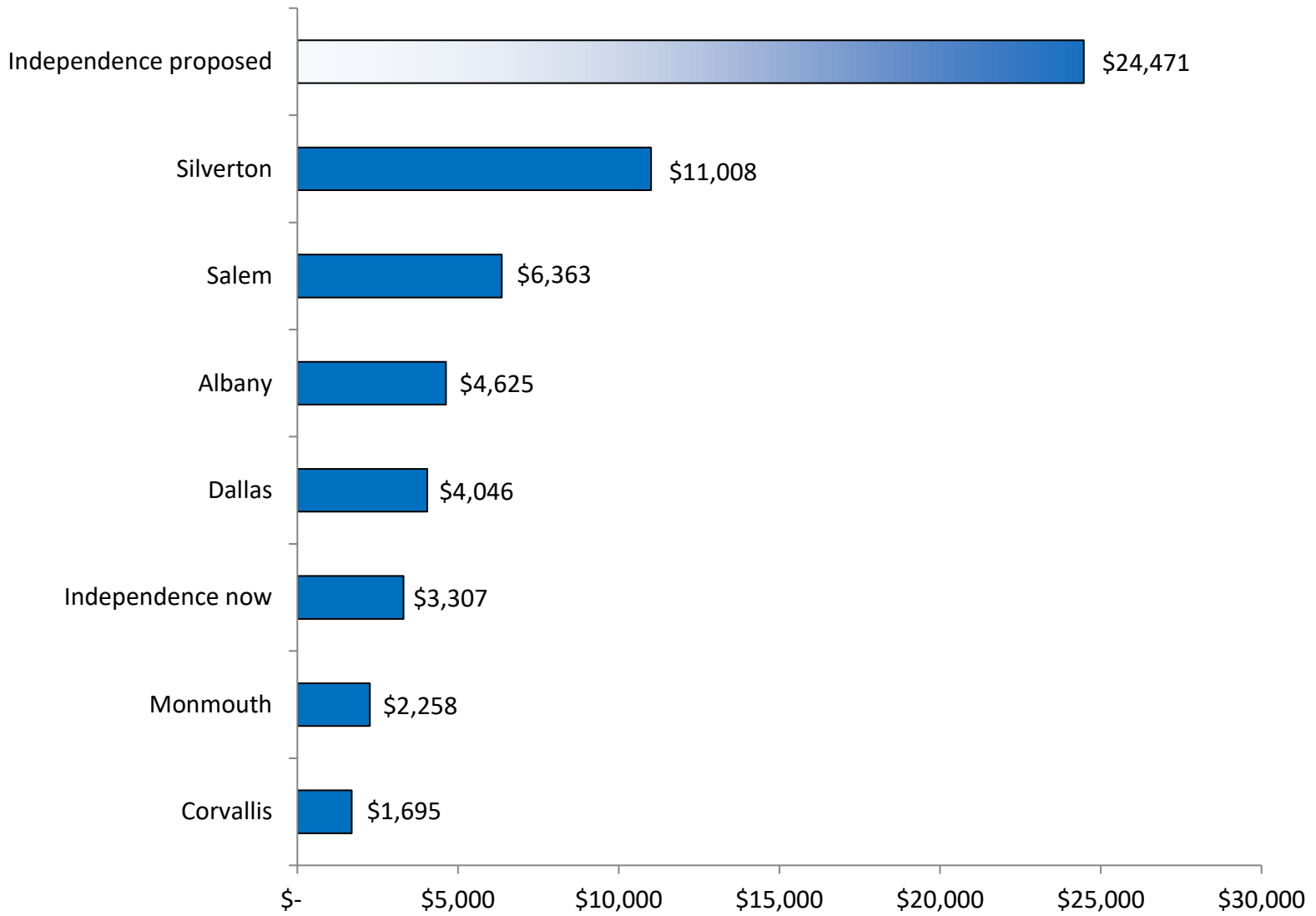
\* - AWWA Manual of Practice M6; Water Meters - Selection, Installation, Testing, and Maintenance; Table 2-2 Total Quantities Registered per Month by Meters Operating at Varying Percentages of Maximum Capacity

## Water SDCs in Neighboring Communities

Shown below in Figures 3 is a chart that compares the current and proposed water SDC for a single-family customer in the Utility to the same charge in similar communities in nearby Douglas and Lane Counties.

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Figure 2 - Neighboring Communities' Water SDCs (Detached Single Family) October, 2023



## Appendix A – Historical Price Movements in the Engineering News Record Construction Cost Index

HOW ENR BUILDS THE INDEX: 200 hours of common labor at the 20-city average of common labor rates, plus 25 cwt of standard structural steel shapes at the mill price prior to 1996 and the fabricated 20-city price from 1996, plus 1.128 tons of portland cement at the 20-city price, plus 1,088 board ft of 2 x 4 lumber at the 20-city price.

ENR'S CONSTRUCTION COST INDEX HISTORY (1990-2020)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG.	Annual Percent Change
2023	13175	13176	13176	13230	13288	13345	13425	13473	13486	13498				
2022	12556	12684	12791	12899	13004	13111	13167	13171	13173	13175	13175	13175	13007	7.07%
2021	11627	11698	11749	11849	11989	12112	12237	12463	12464	12464	12647	12482	12148	5.95%
2020	11392	11396	11397	11412	11418	11436	11439	11455	11499	11539	11579	11626	11466	1.46%
2019	11206	11213	11228	11228	11230	11268	11293	11311	11539	11326	11381	11381	11300	2.16%
2018	10878	10889	10959	10971	11013	11069	11116	11124	11170	11183	11184	11186	11062	3.04%
2017	10531	10559	10667	10678	10692	10703	10789	10826	10823	10817	10870	10873	10736	3.84%
2016	10132	10181	10242	10279	10315	10337	10379	10385	10403	10434	10442	10530	10338	3.02%
2015	9972	9962	9972	9992	9975	10039	10037	10039	10065	10128	10092	10152	10035	2.33%
2014	9664	9681	9702	9750	9796	9800	9835	9846	9870	9886	9912	9936	9807	2.72%
2013	9437	9453	9456	9484	9516	9542	9552	9545	9552	9689	9666	9668	9547	2.56%
2012	9176	9198	9268	9273	9290	9291	9324	9351	9341	9376	9398	9412	9308	2.63%
2011	8938	8998	9011	9027	9035	9053	9080	9088	9116	9147	9173	9172	9070	3.08%
2010	8660	8672	8671	8677	8761	8805	8844	8837	8836	8921	8951	8952	8799	2.67%
2009	8549	8533	8534	8528	8574	8578	8566	8564	8586	8596	8592	8641	8570	3.13%
2008	8090	8094	8109	8112	8141	8185	8293	8362	8557	8623	8602	8551	8310	4.30%
2007	7880	7880	7856	7865	7942	7939	7959	8007	8050	8045	8092	8089	7967	2.78%
2006	7660	7689	7692	7695	7691	7700	7721	7722	7763	7883	7911	7888	7751	4.10%
2005	7297	7298	7309	7355	7398	7415	7422	7479	7540	7563	7630	7647	7446	4.65%
2004	6825	6862	6957	7017	7065	7109	7126	7188	7298	7314	7312	7308	7115	6.28%
2003	6581	6640	6627	6635	6642	6694	6695	6733	6741	6771	6794	6782	6695	2.39%
2002	6462	6462	6502	6480	6512	6532	6605	6592	6589	6579	6578	6563	6538	3.09%
2001	6281	6272	6279	6286	6288	6318	6404	6389	6391	6397	6410	6390	6342	1.94%
2000	6130	6160	6202	6201	6233	6238	6225	6233	6224	6259	6266	6283	6221	2.67%
1999	6000	5992	5986	6008	6006	6039	6076	6091	6128	6134	6127	6127	6060	2.35%
1998	5852	5874	5875	5883	5881	5895	5921	5929	5963	5986	5995	5991	5920	1.64%
1997	5765	5769	5759	5799	5837	5860	5863	5854	5851	5848	5838	5858	5825	3.61%
1996	5523	5532	5537	5550	5572	5597	5617	5652	5683	5719	5740	5744	5622	2.76%
1995	5443	5444	5435	5432	5433	5432	5484	5506	5491	5511	5519	5524	5471	1.18%
1994	5336	5371	5381	5405	5405	5408	5409	5424	5437	5437	5439	5439	5408	3.78%
1993	5071	5070	5106	5167	5262	5260	5252	5230	5255	5264	5278	5310	5210	4.53%
1992	4888	4884	4927	4946	4965	4973	4992	5032	5042	5052	5058	5059	4985	3.10%
1991	4777	4773	4772	4766	4801	4818	4854	4892	4891	4892	4896	4889	4835	2.18%
1990	4680	4685	4691	4693	4707	4732	4734	4752	4774	4771	4787	4777	4732	