



LEAGUE OF OREGON CITIES

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# Water, Wastewater and Stormwater Rate Survey

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## **About the Community Planning Workshop**

Community Planning Workshop (CPW) is one of the core programs of the University of Oregon's Community Service Center (CSC) ([csc.uoregon.edu](http://csc.uoregon.edu)). Established in 1977, CPW provides students the opportunity to address planning and public policy problems for clients throughout Oregon. Students work in teams under the direction of faculty and Graduate Teaching Fellows to develop proposals, conduct research, analyze and evaluate alternatives, and make recommendations for possible solutions to planning problems in rural Oregon communities.



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# CHAPTER I: INTRODUCTION

In the summer of 2014, the League of Oregon Cities (LOC) surveyed its member cities to obtain information about utility rates and other system characteristics for water, wastewater and stormwater. The League contracted with the Community Service Center (CSC) at the University of Oregon to help design and conduct the survey.

This is the third LOC water, wastewater and stormwater survey. The League contracted with Oregon State University to conduct the first survey in 2004. With assistance from the Environment Finance Center at Boise State University, the survey was expanded in 2009 to include additional topics relative to utility operations. The 2014 survey includes many topics from the 2009 survey and covers areas beyond just rates and charges. Survey topics include:

- Asset management;
- Service population and connections;
- Facility age and capacity;
- Water source;
- System characteristics (e.g., miles of lines, pump/lift stations);
- Level of treatment;
- Water loss and metering; and
- Water and wastewater programs.

Previous survey results have proven to be a valuable resource enabling cities to compare their current policies and practices to other cities throughout the state. The League only conducts the survey every five years, so it is vital to obtain information on the current state of Oregon's water utility rates and system characteristics. The survey results are also used by the League to advocate for cities at the state level. The League gives cities access to the results so they can use it as a reference and for comparison to other cities' rates and data.

Since not all cities provide water, wastewater and stormwater services, CSC sent out a preliminary survey to identify what services cities provide and appropriate city staff contacts for the different sections of the full survey. All 242 cities received the preliminary survey, and 168 responded (a 70 percent response rate). Table 1.1 depicts the number of cities that provide water, wastewater and stormwater services. Only two cities do not provide any: King City and Rivergrove.

**Table 1.1: Number of Cities That Provide Services**

| <b>Service</b> | <b># of Respondents</b> | <b>Do Provide</b> | <b>Do Not Provide</b> | <b>No Response</b> |
|----------------|-------------------------|-------------------|-----------------------|--------------------|
| Water          | 168                     | 157               | 11                    | 0                  |
| Wastewater     | 162                     | 138               | 24                    | 6                  |
| Stormwater     | 163                     | 110               | 53                    | 5                  |

To develop the survey, the League assembled a focus group of public works staff to provide input and recommendations on the survey content and methodologies. CSC incorporated those recommendations into a revised survey that was distributed to all 242 Oregon cities. Cities received follow-up emails as reminders to complete the survey if they had not submitted a response.

## Full Survey Respondent Characteristics

Every county had at least one responding city except for Crook County, which only has one incorporated city. Overall, city response rate per county was strong. Exactly half of the 36 counties had a 50 percent response rate or higher, and five counties had a response rate of 75 percent or higher. Only two responding cities indicated that they did not have any systems.

### Smallest City to Complete Survey

Lonerock      Population: 34

### Largest City to Complete Survey

Portland      Population: 592,120

## Response Rate

For the full 2014 Water, Wastewater and Stormwater Survey, 55 percent (133) of Oregon's 242 incorporated cities responded to the survey. Of the cities that responded, nearly 89 percent of the cities fully completed the surveys. Details of the response rate:

- Cities with a population of <10,000 account for about 80 percent of cities in Oregon and represented 76 percent of survey respondents.
- In general, as city size increased so did the response rate.
- Cities of 50,000 or more had the highest response rate of 73 percent.
- Cities of <1,000 had the lowest response rate of 49 percent.

**Table 1.2: Response Rate by City Size**

| City Size      | # of Cities Responded | # of Oregon Cities | Response Rate |
|----------------|-----------------------|--------------------|---------------|
| <1,000         | 40                    | 82                 | 49%           |
| 1,000-4,999    | 47                    | 84                 | 56%           |
| 5,000-9,999    | 15                    | 30                 | 50%           |
| 10,000-24,999  | 17                    | 26                 | 65%           |
| 25,000-49,999  | 6                     | 9                  | 67%           |
| 50,000 or more | 8                     | 11                 | 73%           |
| All cities     | 133                   | 242                | 55%           |

## Organization of this Report

The remainder of this report is organized into five chapters and several appendices:

**Chapter 2** discusses cities' utility billing in general. It includes topics related to the frequency of billing, how payments are accepted, overall fee structure, how fees are enforced, rate revenue data, and information related to billing credits and adjustments.

**Chapter 3** presents key characteristics of the water, wastewater and stormwater systems. It covers the services that cities provide, service population, and number of connections for the different systems.

**Chapter 4** contains survey rate and infrastructure highlights for drinking water, wastewater and stormwater. The rates discussed in this chapter review: how each system's rate structure is set up; when rates have changed; why they have changed; and the average bill for a resident based on a predetermined volume of water/wastewater. Since this section only highlights results for each system, more data is presented in the appendices.

**Chapter 5** reviews survey responses regarding asset management. It summarizes how many cities have asset management plans for water, wastewater and stormwater utilities, and whether those plans are adequately funded.

The report also includes five appendices:

**Appendix A** elaborates on the methodology, the survey design, and data editing and analysis.

**Appendix B** shows the year in which cities conducted their most recent water rate study and a methodology update.

**Appendix C** contains cities' responses about the water rate structure, pricing and system characteristics.

**Appendix D** contains cities' responses about the wastewater rate structure, pricing and system characteristics.

**Appendix E** contains cities' responses about stormwater fees, pricing and system characteristics.

## CHAPTER 2: UTILITY BILLING

The survey asked cities about the characteristics of how they bill their customers. Questions addressed the frequency of billing, how payments are accepted, overall rate structure, how fees are enforced, rate revenue data, and information related to billing credits and adjustments. Since the 2009 survey did not include these topics, there is no comparison between the 2009 and 2014 survey results.

### Billing

Most cities bill customers monthly, while only a few use bi-monthly, quarterly or another timeframe. Most of the cities that did not bill monthly are less than 25,000 in population (Table 2.1).

**Table 2.1: Number of Cities per Billing Frequency**

| City Size      | Monthly | Bi-monthly | Quarterly | Other |
|----------------|---------|------------|-----------|-------|
| <1,000         | 34      | 4          | 0         | 2     |
| 1,000-4,999    | 37      | 2          | 0         | 1     |
| 5,000-9,999    | 13      | 1          | 0         | 0     |
| 10,000-24,999  | 13      | 2          | 0         | 0     |
| 25,000-49,999  | 6       | 0          | 0         | 0     |
| 50,000 or more | 4       | 0          | 1         | 0     |
| All cities     | 107     | 9          | 1         | 3     |

Not surprisingly, all cities accept cash and check as a form of payment. Smaller cities predominately accept cash, check and money orders while larger cities have higher percentage rates of accepting all forms of payment (Table 2.2). The survey results show that as the population size increases, the payment methods accepted diversified. It is consistent, regardless of city size, that e-checks are the least likely accepted form of payment.

**Table 2.2: Percentage of Cities that Accept Methods of Payment**

| City Size      | Cash | Check | Credit/Debit | Money Order | Direct Deposit | e-check |
|----------------|------|-------|--------------|-------------|----------------|---------|
| <1,000         | 100  | 100   | 16           | 84          | 13             | 11      |
| 1,000-4,999    | 100  | 100   | 50           | 95          | 38             | 33      |
| 5,000-9,999    | 100  | 100   | 86           | 93          | 79             | 71      |
| 10,000-24,999  | 100  | 100   | 93           | 93          | 73             | 53      |
| 25,000-49,999  | 100  | 100   | 100          | 83          | 100            | 67      |
| 50,000 or more | 100  | 100   | 100          | 100         | 80             | 60      |
| All cities     | 100  | 100   | 53           | 91          | 44             | 36      |

Many service providers are starting to offer their customers paperless billing as a convenient way for customers to receive, view and pay bills while also “going green.” The survey results indicate that more cities than not, with a population of 5,000 or more, provide paperless billing (Table 2.3).

In addition to paperless billing, the survey also asked cities if they contract out billing. Results show that while relatively few cities contract out billing in Oregon, many of the cities that do are less than 25,000 in population. A majority of cities that don’t contract out billing and do their own billing use proprietary software, the most popular being QuickBooks, Springbrook and Asyst.

**Table 2.3: Characteristics of Billing Services (# of Cities Using)**

| <b>City Size</b> | <b>Paperless Billing</b> | <b>Contract Out Billing</b> | <b>Proprietary Software</b> | <b># of Responses</b> |
|------------------|--------------------------|-----------------------------|-----------------------------|-----------------------|
| <1,000           | 3                        | 2                           | 31                          | 38                    |
| 1,000-4,999      | 4                        | 1                           | 26                          | 40                    |
| 5,000-9,999      | 12                       | 4                           | 8                           | 14                    |
| 10,000-24,999    | 11                       | 4                           | 10                          | 15                    |
| 25,000-49,999    | 5                        | 0                           | 6                           | 6                     |
| 50,000 or more   | 4                        | 0                           | 5                           | 5                     |
| All cities       | 39                       | 11                          | 86                          | 118                   |

## Account Features & Fees

A majority of cities do not require the account to be in the property owner’s name. However, cities with a population of 25,000 or more frequently had this requirement compared to smaller cities. When a property is unoccupied, most cities will close the account associated with that property until the next occupant opens an account. However, some cities allow the owner to request a vacant rate instead of closing the account. The latter option occurs more in cities with populations of less than 5,000. This is conceivable since many cities with a population of less than 5,000 experience an increase in residents during certain times of the year (Table 3.2). Many of these seasonal residents may occupy another home during other parts of the year. Most cities have an “other” way of handling billing for vacant properties as shown in Table 2.5.



**Table 2.4: Percentage of Cities that Require Account to be in Property Owner's Name**

| City Size      | Account Must be Property Owner |
|----------------|--------------------------------|
| <1,000         | 26                             |
| 1,000-4,999    | 17                             |
| 5,000-9,999    | 8                              |
| 10,000-24,999  | 7                              |
| 25,000-49,999  | 33                             |
| 50,000 or more | 50                             |
| All cities     | 19                             |

**Table 2.5: Number of Cities Billing for Vacant Properties**

| City Size      | Close Account, No Charges | Vacant Rate, Request of Owner | Does Not Handle | Other |
|----------------|---------------------------|-------------------------------|-----------------|-------|
| <1,000         | 14                        | 4                             | 1               | 16    |
| 1,000-4,999    | 21                        | 8                             | 0               | 9     |
| 5,000-9,999    | 5                         | 0                             | 0               | 8     |
| 10,000-24,999  | 6                         | 2                             | 1               | 6     |
| 25,000-49,999  | 3                         | 0                             | 0               | 3     |
| 50,000 or more | 2                         | 0                             | 0               | 1     |
| All cities     | 51                        | 14                            | 2               | 43    |

The survey asked what additional types of account fees are included in water bills. Based on the responses, the most common type of account fee included in the bill was shutoff followed by “other” fees. “Other” examples include, but are not limited to, system improvement, stormwater and emergency fund. A handful of cities with a population of less than 5,000 do not have any fees, which is not the case for other city sizes.

**Table 2.6: Number of Cities with Types of Account Fees**

| City Size      | Backflow | New Account | Shutoff | Tampering | None | Other |
|----------------|----------|-------------|---------|-----------|------|-------|
| <1,000         | 6        | 12          | 16      | 4         | 11   | 7     |
| 1,000-4,999    | 4        | 8           | 14      | 7         | 10   | 15    |
| 5,000-9,999    | 0        | 2           | 12      | 6         | 1    | 7     |
| 10,000-24,999  | 1        | 6           | 7       | 7         | 1    | 7     |
| 25,000-49,999  | 2        | 1           | 6       | 4         | 0    | 0     |
| 50,000 or more | 2        | 2           | 3       | 3         | 1    | 1     |
| All cities     | 15       | 31          | 58      | 31        | 24   | 37    |

The survey also asked what types of governmental fees are included in water bills, such as streetlights, parks, police and library fees. As Table 2.7 shows, the number of cities that include other government service fees in their utility bills is very small. If cities do include such fees, most are for “other” types of fees, followed by streetlights, parks and police. “Other” examples include, but are not limited to, Emergency Medical Services (EMS), fire protection and street maintenance. The latter was the most frequently listed example.

**Table 2.7: Number of Cities with Types of Governmental Fees**

| City Size      | Streetlights | Parks | Police | Library | None | Other |
|----------------|--------------|-------|--------|---------|------|-------|
| <1,000         | 0            | 1     | 1      | 0       | 33   | 0     |
| 1,000-4,999    | 4            | 2     | 0      | 0       | 26   | 7     |
| 5,000-9,999    | 1            | 2     | 2      | 1       | 6    | 5     |
| 10,000-24,999  | 4            | 0     | 1      | 0       | 6    | 6     |
| 25,000-49,999  | 0            | 1     | 1      | 0       | 2    | 4     |
| 50,000 or more | 0            | 1     | 1      | 0       | 2    | 2     |
| All cities     | 9            | 7     | 6      | 1       | 75   | 24    |

When an account holder has a late payment or nonpayment, cities use several methods of enforcement to address the issue. Table 2.8 indicates the most popular method of enforcement is to disconnect the water service, followed by administering a late fee. Although not as highly used, liens on property and collections are other commonly used methods.

**Table 2.8: Number of Cities that Use Methods of Enforcement for Late or Nonpayment**

| City Size      | Penalties and Interest | Collections | Lien on Property | Other | Late Fee | Disconnect Water Service |
|----------------|------------------------|-------------|------------------|-------|----------|--------------------------|
| <1,000         | 10                     | 17          | 25               | 3     | 31       | 37                       |
| 1,000-4,999    | 10                     | 19          | 32               | 2     | 36       | 37                       |
| 5,000-9,999    | 5                      | 9           | 10               | 2     | 13       | 14                       |
| 10,000-24,999  | 4                      | 13          | 7                | 4     | 11       | 15                       |
| 25,000-49,999  | 4                      | 6           | 3                | 0     | 6        | 6                        |
| 50,000 or more | 3                      | 5           | 1                | 1     | 4        | 5                        |
| All cities     | 36                     | 69          | 78               | 12    | 101      | 114                      |

While disconnecting the water service is a common method of enforcement, most cities wait four to six weeks before disconnecting a customer's service (Table 2.9). Cities of 50,000 in population allowed for the longest elapsed time for disconnect at an average of 49 days. On average, cities with a population of less than 25,000 will assess a late fee less than a month from the due date, while cities with a population of 25,000 or more allow for more than a month. The average number of days before triggering collections for responding cities varied from less than two months to almost four months.

**Table 2.9: Average Days Elapsed Before Method of Enforcement Triggered**

| City Size      | Late Fee Assessed | Disconnect | Collections |
|----------------|-------------------|------------|-------------|
| <1,000         | 17                | 44         | 83          |
| 1,000-4,999    | 19                | 31         | 74          |
| 5,000-9,999    | 23                | 35         | 58          |
| 10,000-24,999  | 22                | 32         | 78          |
| 25,000-49,999  | 38                | 45         | 113         |
| 50,000 or more | 39                | 49         | 69          |
| All cities     | 20                | 37         | 79          |

## Rate Characteristics

The survey results show that a majority of cities (81 percent for water, 81 percent for wastewater, 86 percent for stormwater) do not have an automatic CPI/Income adjustment. Cities with a population range of 1,000-4,999 and 10,000-49,999 represent the highest percentage of cities that automatically adjust rates for inflation. None of the cities with a population of 50,000 or more automatically adjust rates for inflation. Cities had the option to select “not applicable” (N/A) in order to indicate that they do not provide this service.

**Table 2.10: Percentage of Cities with Automatic CPI/Income Adjustment**

| City Size      | Water |     | Wastewater |     | Stormwater |     |
|----------------|-------|-----|------------|-----|------------|-----|
|                | %     | N/A | %          | N/A | %          | N/A |
| <1,000         | 6     | 5   | 10         | 13  | 0          | 24  |
| 1,000-4,999    | 33    | 5   | 27         | 8   | 25         | 21  |
| 5,000-9,999    | 8     | 0   | 9          | 2   | 0          | 2   |
| 10,000-24,999  | 23    | 1   | 23         | 1   | 25         | 2   |
| 25,000-49,999  | 33    | 0   | 33         | 0   | 20         | 1   |
| 50,000 or more | 0     | 0   | 0          | 1   | 0          | 2   |
| All cities     | 19    | 11  | 19         | 25  | 14         | 52  |

Cities often require a percentage of their rate revenue to be used for debt service, which is a way to cover the payment of interest and principle on existing debt for water infrastructure projects. As Table 2.11 shows, it is more common for cities to have a higher percentage of their rate revenue for water and wastewater obligated to debt service than it is for stormwater, except for larger cities, where all three are common. In general, wastewater has a slightly higher percentage of rate revenue obligated to debt service than water.

**Table 2.11 Average Percent of Rate Revenue Obligated to Debt Service**

| City Size      | Water | Wastewater | Stormwater |
|----------------|-------|------------|------------|
| <1,000         | 26    | 33         | 0          |
| 1,000-4,999    | 15    | 20         | 0          |
| 5,000-9,999    | 31    | 25         | 11         |
| 10,000-24,999  | 20    | 18         | 4          |
| 25,000-49,999  | 11    | 24         | 5          |
| 50,000 or more | 22    | 28         | 30         |
| All cities     | 21    | 24         | 4          |

Generally speaking, as city size increases so does the percentage of cities that offer waivers. Cities had the opportunity to elaborate on what types of customers received waivers, and the spectrum of customers is rather large. Responses included churches, veterans, low income families, senior citizens, active duty military personnel, and hardship-approved customers. Low income and senior citizens were by far the

most frequent type of customer to receive a waiver, while some cities had unique customers. For example, one city offered its city employees free water and another city provided waivers for active duty military personnel.

When it comes to credits and adjustments for billing errors and leaks, a majority of cities provide adjustments for both. Cities are more likely to make adjustments for water leaks than for wastewater leaks as shown in Table 2.12.

**Table 2.12 Percentage of Cities That Provide Waiver, Credits and Adjustments**

| City Size      | Waivers for Certain Customers | Credit & Billing Adjustments |            |                             |             |                  |
|----------------|-------------------------------|------------------------------|------------|-----------------------------|-------------|------------------|
|                |                               | Only Billing Errors          | Only Leaks | Both Billing Errors & Leaks | Water Leaks | Wastewater Leaks |
| <1,000         | 18                            | 18                           | 3          | 72                          | 100         | 7                |
| 1,000-4,999    | 26                            | 10                           | 0          | 85                          | 97          | 24               |
| 5,000-9,999    | 21                            | 0                            | 7          | 93                          | 93          | 71               |
| 10,000-24,999  | 53                            | 0                            | 7          | 93                          | 93          | 60               |
| 25,000-49,999  | 83                            | 0                            | 0          | 100                         | 100         | 33               |
| 50,000 or more | 80                            | 0                            | 0          | 100                         | 100         | 80               |
| All cities     | 31                            | 9                            | 3          | 84                          | 97          | 34               |

## CHAPTER 3: SYSTEM CHARACTERISTICS

This chapter summarizes key characteristics of the responding municipalities' systems such as: service provision; service populations both inside and outside city limits for permanent and seasonal residents; and the number of connections both inside and outside the city limits.

### Services Provided

Of the 133 cities that responded to the survey:

- 121 provide water;
- 106 provide wastewater; and
- 61 provide stormwater.

Table 3.1 shows that water is the most predominant service offered, followed by wastewater, then stormwater. This is consistent with results from the preliminary survey (Table 1.1). Cities with a population of 5,000 or more are more likely to provide stormwater services than cities with a population less than 5,000.

**Table 3.1: Number of Cities Providing Services**

| City Size      | Water |    | Wastewater |    | Stormwater |    |
|----------------|-------|----|------------|----|------------|----|
|                | Yes   | No | Yes        | No | Yes        | No |
| <1,000         | 37    | 2  | 25         | 14 | 5          | 34 |
| 1,000-4,999    | 41    | 3  | 39         | 6  | 17         | 27 |
| 5,000-9,999    | 15    | 0  | 13         | 2  | 13         | 1  |
| 10,000-24,999  | 16    | 1  | 16         | 1  | 15         | 2  |
| 25,000-49,999  | 7     | 0  | 7          | 0  | 5          | 2  |
| 50,000 or more | 5     | 1  | 6          | 0  | 6          | 0  |
| All cities     | 121   | 7  | 106        | 23 | 61         | 66 |

### Water

Oregon's statewide planning Goal 11 (Public Facilities and Services) limits types of services and facilities cities can provide outside of urban growth boundaries (UGBs). However, cities commonly provide services to unincorporated areas that are within the UGB. Common examples include providing water to residents within the UGB, wholesale agreements with a neighboring community, and providing water to unincorporated properties such as airports and schools.

The survey asked cities to list their permanent service population inside and outside the city limits. Additionally, cities were also given the option to indicate their peak population if it changes throughout the year. As Table 3.2 illustrates, it is common for Oregon cities to provide water services to customers outside of the city limits. Generally, the service population residing outside city limits is larger for bigger cities. Usually, the larger utilities in Oregon provide water to other cities or subdivisions under special agreements. Only one of the cities with a population range of 25,000-49,999 listed an outside population.

Of the cities that have service populations inside and outside city limits, many had the same population count for permanent and peak populations. However, some cities did experience an increase in population for a peak population. Cities with a smaller population (less than 5,000) accounted for 87 percent of cities (12 of 14) that experienced a peak inside population increase and 71 percent of cities (5 of 7) that experienced a peak outside population.

**Table 3.2: Average Water Service Population Inside and Outside City Limits**

| City Size      | Permanent Residents |                    |
|----------------|---------------------|--------------------|
|                | Inside Population   | Outside Population |
| <1,000         | 470                 | 52                 |
| 1,000-4,999    | 1,905               | 225                |
| 5,000-9,999    | 7,581               | 216                |
| 10,000-24,999  | 18,066              | 4,973              |
| 25,000-49,999  | 35,634              | 17                 |
| 50,000 or more | 82,986              | 17,680             |
| All cities     | 10,419              | 1,907              |

On average, more outside connections exist for Single Family Residential (SFR) than commercial (Table 3.3). In other words, 11 percent of SFR connections are located outside city limits compared to 7 percent for commercial. “Other” connections surpass both SFR and commercial for cities with a population of 25,000 or more in having a larger percentage of connections located outside city limits. Although several outside connections exist for both SFR, commercial and other for all city sizes, Table 3.4 demonstrates SFRs are the most prevalent type of outside connection.

**Table 3.3: Average Number of Inside and Outside Water Connections (relative to city limits)**

| City Size      | Single Family Residential |         | Commercial |         | Other  |         |
|----------------|---------------------------|---------|------------|---------|--------|---------|
|                | Inside                    | Outside | Inside     | Outside | Inside | Outside |
| <1,000         | 270                       | 75      | 18         | 3       | 4      | 0       |
| 1,000-4,999    | 800                       | 53      | 126        | 5       | 45     | 1       |
| 5,000-9,999    | 2,629                     | 212     | 249        | 5       | 86     | 2       |
| 10,000-24,999  | 5,150                     | 972     | 590        | 87      | 305    | 2       |
| 25,000-49,999  | 9,492                     | 984     | 705        | 16      | 797    | 124     |
| 50,000 or more | 22,339                    | 2,297   | 2,323      | 154     | 1,673  | 729     |
| All cities     | 3,136                     | 396     | 307        | 24      | 235    | 82      |

**Table 3.4: Percent Composition of Outside Water Connections**

| City Size      | % Single Family Residential | % Commercial | % Other |
|----------------|-----------------------------|--------------|---------|
| <1,000         | 97                          | 3            | 0       |
| 1,000-4,999    | 90                          | 9            | 1       |
| 5,000-9,999    | 97                          | 2            | 1       |
| 10,000-24,999  | 92                          | 8            | 0       |
| 25,000-49,999  | 88                          | 1            | 11      |
| 50,000 or more | 72                          | 5            | 23      |
| All cities     | 79                          | 5            | 16      |

## Wastewater

For each city size, roughly one-third of cities provide wastewater services outside of their city limits. The average outside population receiving wastewater services is lower than the outside population receiving water service by 375 residents. The difference in outside populations receiving water versus wastewater increases significantly to about 4,100 residents for cities with a population between 10,000 and 24,999. The larger average for water is due to one city that has a significantly high outside service population for water. If that city were not included in the average, the outside water service population is more comparable at 1,270 residents. The number of cities that experienced a peak inside/outside service population for wastewater services is relatively low. Only eight cities experienced an increase in peak inside population and five of those cities were less than 5,000 in population. Only two cities experienced a peak outside population.

**Table 3.5: Average Wastewater Service Population Inside and Outside City Limits**

| City Size      | Permanent Residents |                    |
|----------------|---------------------|--------------------|
|                | Inside Population   | Outside Population |
| <1,000         | 521                 | 19                 |
| 1,000-4,999    | 2,028               | 84                 |
| 5,000-9,999    | 8,427               | 71                 |
| 10,000-24,999  | 17,414              | 870                |
| 25,000-49,999  | 30,101              | -                  |
| 50,000 or more | 66,115              | 18,872             |
| All cities     | 11,054              | 1,532              |

When compared to water, wastewater has a lower average number of connections per connection type. This is expected given that water is the most commonly provided service among the cities that responded to the survey. Interestingly, cities with a population of 50,000 or more have a higher percentage of SFR



(16 percent) and commercial (11 percent) connections located outside the city limits compared to water which is 9 percent and 6 percent, respectively. As shown in Table 3.7 SFR remains the predominate type of outside connection for all city sizes.

**Table 3.6: Average Number of Inside and Outside Wastewater Connections (relative to city limits)**

| City Size      | Single Family Residential |         | Commercial |         | Other  |         |
|----------------|---------------------------|---------|------------|---------|--------|---------|
|                | Inside                    | Outside | Inside     | Outside | Inside | Outside |
| <1,000         | 250                       | 7       | 19         | 1       | 3      | -       |
| 1,000-4,999    | 768                       | 26      | 83         | 4       | 47     | -       |
| 5,000-9,999    | 2,841                     | 12      | 297        | 2       | 43     | 0       |
| 10,000-24,999  | 5,256                     | 200     | 473        | 28      | 323    | 0       |
| 25,000-49,999  | 8,348                     | 266     | 776        | 6       | 598    | 55      |
| 50,000 or more | 22,449                    | 4,424   | 1,873      | 224     | 7,752  | 587     |
| All cities     | 3,273                     | 363     | 299        | 20      | 876    | 51      |

**Table 3.7: Percent Composition of Outside Wastewater Connections**

| City Size      | % Single Family Residential | % Commercial | % Other |
|----------------|-----------------------------|--------------|---------|
| <1,000         | 93                          | 7            | 0       |
| 1,000-4,999    | 87                          | 13           | 0       |
| 5,000-9,999    | 85                          | 13           | 2       |
| 10,000-24,999  | 88                          | 12           | 0       |
| 25,000-49,999  | 81                          | 2            | 17      |
| 50,000 or more | 85                          | 4            | 11      |
| All cities     | 84                          | 5            | 12      |

## Stormwater

Stormwater is the least common service provided when compared to water and wastewater. If a city does provide it, it is predominately offered inside city limits (Table 3.8). In this survey, for the cities that do provide stormwater services outside of city limits, most of the connections are SFR. However, only six cities listed an outside population for SFR. Two cities listed an outside population for commercial, and none of the cities reported outside connections of “other.”

**Table 3.8: Average Number of Inside and Outside Stormwater Connections (relative to city limits)**

| City Size      | Single Family Residential |         | Commercial |         | Other  |         |
|----------------|---------------------------|---------|------------|---------|--------|---------|
|                | Inside                    | Outside | Inside     | Outside | Inside | Outside |
| <1,000         | 132                       | 1       | 14         | 0       | 0      | 0       |
| 1,000-4,999    | 811                       | 7       | 82         | 0       | 22     | 0       |
| 5,000-9,999    | 2,258                     | 0       | 242        | 0       | 22     | 0       |
| 10,000-24,999  | 4,972                     | 76      | 533        | 16      | 173    | 0       |
| 25,000-49,999  | 11,300                    | 0       | 586        | 0       | 2,490  | 0       |
| 50,000 or more | 24,826                    | 0       | 2,157      | 0       | 2,292  | 0       |
| All cities     | 4,241                     | 20      | 385        | 4       | 2,218  | 0       |

## CHAPTER 4: SYSTEM RATES AND INFRASTRUCTURE HIGHLIGHTS

This chapter highlights survey responses for the water, wastewater and stormwater rates changes and system characteristics. Survey responses are presented in two main subsections for each system. The first section, “Rate Changes,” summarizes: when cities have updated rates; how rates have changed; why they have changed; and pricing structures. The second section describes system characteristics or facilities, including: the age of the facilities; miles of lines; average cost of water; and types of programs among other topics. Comparisons of how the current state of Oregon’s water utility rates and system characteristics has changed since the 2009 survey are also discussed when data is available.

### Drinking Water Systems

#### Rate Changes

Most cities have changed their rates within the last two years. In fact, 2014 was the most common year for rate changes for all city sizes. Only six cities have not adjusted their rates within the last 10 years, and almost all cities increased their rates, with the exception of three. It appears that within the rate change, most of the cities experienced an overall increase in rates; only a handful experienced both increases and decreases. The results illustrate that customers can continue to expect water rates to increase over time.

**Table 4.1: Average Year of Water System Rate Changes & Number of Cities That Experienced Increases and Decreases in Rate Change**

| City Size      | Last Rate Change |      | Overall  |          | Some of the Rates Both Increased and Decreased |    |
|----------------|------------------|------|----------|----------|------------------------------------------------|----|
|                | Avg. Year        | Mode | Increase | Decrease | Yes                                            | No |
| <1,000         | 2012             | 2014 | 33       | 0        | 8                                              | 25 |
| 1,000-4,999    | 2013             | 2014 | 35       | 2        | 7                                              | 30 |
| 5,000-9,999    | 2013             | 2014 | 13       | 1        | 0                                              | 14 |
| 10,000-24,999  | 2014             | 2014 | 14       | 0        | 2                                              | 14 |
| 25,000-49,999  | 2014             | 2014 | 6        | 0        | 0                                              | 6  |
| 50,000 or more | 2014             | 2014 | 6        | 0        | 0                                              | 6  |
| All cities     | 2013             | 2014 | 107      | 3        | 17                                             | 95 |

The survey asked respondents to elaborate on why their rates increased and provided the option to select multiple reasons. Overall, inflation and capital improvement were the top reasons for rate changes, unchanged from the 2009 survey results. This is expected given that the nation’s water system has entered the “rehabilitation and replacement era” as documented in the Environmental Protection Agency’s

(EPA) 2011 Drinking Water Infrastructure Needs Survey and Assessment.<sup>1</sup> Treatment costs and labor costs also were significant reasons for rate changes, but the number of cities that listed those as a catalyst has dropped slightly from the 2009 survey. “State and federal mandate” has also dropped significantly compared to the 2009 survey. Table 4.2 further depicts the breakdown of the catalysts for change.

**Table 4.2: Catalysts for Rate Changes (# of Cities)**

| <b>City Size</b> | <b>State/ Federal Mandate</b> | <b>Inflation/CPI</b> | <b>Treatment Costs</b> | <b>Labor Costs</b> | <b>Capital Improvement</b> | <b>Reason Unknown</b> | <b>Other</b> |
|------------------|-------------------------------|----------------------|------------------------|--------------------|----------------------------|-----------------------|--------------|
| <1,000           | 1                             | 15                   | 7                      | 7                  | 17                         | 1                     | 10           |
| 1,000-4,999      | 2                             | 19                   | 9                      | 10                 | 12                         | 1                     | 6            |
| 5,000-9,999      | 1                             | 7                    | 5                      | 5                  | 9                          | 0                     | 2            |
| 10,000-24,999    | 1                             | 11                   | 4                      | 5                  | 9                          | 0                     | 5            |
| 25,000-49,999    | 1                             | 4                    | 2                      | 2                  | 5                          | 0                     | 0            |
| 50,000 or more   | 2                             | 5                    | 4                      | 4                  | 4                          | 0                     | 0            |
| All cities       | 8                             | 61                   | 31                     | 33                 | 56                         | 2                     | 23           |

The pricing structure a city uses to bill its customers can influence how customers use water. For example, an inclining block rate is going to be more expensive for a customer as the amount of water usage increases. “Other” was the most common type of pricing structure, followed by a flat rate and inclining block rate. Only two cities offer a declining block rate. The most common identified pricing structure in the “other” category is a base rate with usage rates added on. Based on this information, with the high incidence of cities using inclining block rates, it is clear that many cities charge customers more as their water usage increases.

<sup>1</sup>EPA. Drinking Water Infrastructure Needs Survey and Assessment: Fifth Report to Congress. [http://water.epa.gov/grants\\_funding/dwsrf/upload/epa816r13006.pdf](http://water.epa.gov/grants_funding/dwsrf/upload/epa816r13006.pdf)

**Table 4.3: Number of Cities Using Types of Pricing Structures for Water System**

| City Size      | Flat Rate | Inclining Block Rate | Declining Block Rate | Other |
|----------------|-----------|----------------------|----------------------|-------|
| <1,000         | 15        | 10                   | 0                    | 10    |
| 1,000-4,999    | 11        | 11                   | 1                    | 17    |
| 5,000-9,999    | 5         | 3                    | 0                    | 7     |
| 10,000-24,999  | 3         | 6                    | 0                    | 7     |
| 25,000-49,999  | 1         | 2                    | 0                    | 3     |
| 50,000 or more | 2         | 1                    | 1                    | 2     |
| All cities     | 37        | 33                   | 2                    | 46    |

Many cities do not charge for elevation pumping or provide discounts for lower elevations. As highlighted in Table 4.4, more than one-half of the cities that do charge or provide discounts are cities with populations greater than 10,000.

**Table 4.4: Number of Cities Charging for Elevation/ Pumping or Providing Discounts for Lower Elevation**

| City Size      | Do | Do Not | # of Responses |
|----------------|----|--------|----------------|
| <1,000         | 1  | 34     | 35             |
| 1,000-4,999    | 1  | 39     | 40             |
| 5,000-9,999    | 0  | 15     | 15             |
| 10,000-24,999  | 1  | 15     | 16             |
| 25,000-49,999  | 2  | 4      | 6              |
| 50,000 or more | 1  | 5      | 6              |
| All cities     | 6  | 112    | 118            |

## Average Water Bill

The survey asked cities what a residential customer would be charged for using 5,000 gallons of water as measured by a  $\frac{3}{4}$ " meter. Even though cities may offer different pricing structures that do not fit this scenario, this amount was chosen as a way to provide a best possible comparison among cities. If cities did not have a pricing structure that would allow them to bill for exactly 5,000 gallons, they listed the lowest billing amount that would include the 5,000 gallons. The following results are presented by city size and by region. The regional analysis consists of six regions: Coastal, Valley, Southern, Portland/Mt. Hood, Central and Eastern.

It's important to note that the values reported below are just that, values. Assumptions cannot be made that a utility is in the black or red. In other words, a lower value does not necessarily suggest a utility is

meeting its maintenance and operating costs and generating enough revenue to fund capital investments. Similarly, a higher value does not necessarily suggest a city is generating more revenue than it needs.

## City Size

The average water bill for a residential customer was highest for smaller cities, at about \$40, while bills were lowest for cities with populations of 50,000 or more at about \$26. This makes sense as the economy of scale is more favorable for larger utility operations.

When adjusted for inflation, the average 2009 water bill for all city sizes is lower than the 2014 average (Table 4.5). Overall, the average increase from 2009 to 2014 is \$2.22, but for the varying city sizes, the increase ranges from -\$1.23 to \$5.27. While cities with a population of 1,000-4,999 seemed to experience a decrease, this city size has reported increasing their rates as presented in Table 4.1. Furthermore, every city of this size that participated in both the 2009 and 2014 survey reported a higher bill in 2014 than in 2009 for this scenario. One explanation is that cities that did not participate in the 2014 survey but did so in 2009 had higher bills, increasing the 2009 average. Table 4.5 also shows the lowest and highest 2014 average bill for each city size. The city with the lowest bill has not increased its rates since 1998. The city with the highest bill raised rates in 2013 to invest in capital improvements to address a 60 percent water loss rate, cover operation and maintenance costs, and ensure an ability to repay bonds.

**Table 4.5: Average Water Bill for 5,000 gallons with a ¾" meter for a Residential Customer (Dollars)**

| City Size      | 2009 Adjusted* | 2014  | 2014 Low | 2014 High |
|----------------|----------------|-------|----------|-----------|
| <1,000         | 37.36          | 39.95 | 10.00    | 69.75     |
| 1,000-4,999    | 35.27          | 34.04 | 15.00    | 60.75     |
| 5,000-9,999    | 30.08          | 33.40 | 20.10    | 51.38     |
| 10,000-24,999  | 26.41          | 31.68 | 14.26    | 57.94     |
| 25,000-49,999  | 27.47          | 32.65 | 18.55    | 57.32     |
| 50,000 or more | 22.02          | 26.21 | 10.57    | 43.09     |
| All cities     | 32.66          | 34.88 | 10.00    | 69.75     |

\*Portland-Salem CPI-U used

## Regional

As illustrated in Table 4.6, each region's average, highest and lowest bill is reported along with the range. Additionally, Appendix C provides charts of cities' reported water bills for each region. The Southern region had the lowest average water bill at \$30.12, while the Valley had the highest average bill at \$40.26 (34 percent more expensive). When compared to city size averages, the average regional bill is similar but tends to be slightly higher. The Eastern region houses the city with the lowest reported bill, and the city with the highest bill resides in the Valley. Regardless of region, the lowest water bills are comparable, falling roughly within a \$10 window. This is not the case when comparing the six regions' highest bills—the biggest difference is almost \$30.

While every region had a broad distribution of reported values, some notable differences exist. For this scenario, the Valley did not have any cities reporting a water bill less than \$20. Only five cities had a reported bill of \$60 or more. Four out of five of those cities are located within the Valley. While the Southern region has the lowest average bill and range, the Central region would have the lowest average water bill at around \$29 with the exception of one city.

**Table 4.6 Average Water Bill for 5,000 gallons with a ¾" meter for a Residential Customer by Region (Dollars)**

| City Size         | 2014  | Low   | High  | Range |
|-------------------|-------|-------|-------|-------|
| Coastal           | 38.01 | 17.40 | 60.75 | 43.35 |
| Valley            | 40.26 | 20.10 | 69.75 | 49.65 |
| Southern          | 30.12 | 10.57 | 41.97 | 31.40 |
| Portland/Mt. Hood | 33.19 | 14.85 | 57.32 | 42.47 |
| Central           | 31.96 | 14.26 | 57.94 | 43.68 |
| Eastern           | 31.73 | 10.00 | 45.92 | 35.92 |
| All cities        | 34.88 | 10.00 | 69.75 | 59.75 |

## Facilities and Infrastructure

A positive correlation exists between city size and the average age of water facilities, based on original construction date; age increases with city size. For example, the average years plants were built for cities with populations less than 10,000 were in the 1960s. For cities with a population of 10,000 or more, the average years of original construction of facilities took place in the 1930s to 1940s (Table 4.7). For facility upgrades, most of the city sizes had an average upgrade year that occurred within the last decade, except for cities with a population of less than 1,000 and 25,000-49,999.

Overall, the average age of facilities is older in the 2014 survey (54 years) when compared to the 2009 survey, which was 25 years old (adjusted for age in 2014). This holds true even when broken down by city size. This may be due to an increase in respondents that provided a year of original construction for the 2014 survey which would have increased the average age of facilities.

**Table 4.7: Average Age of Facility and Facility Upgrades**

| City Size      | Avg. Year Built | Avg. Year Upgraded |
|----------------|-----------------|--------------------|
| <1,000         | 1966            | 2000               |
| 1,000-4,999    | 1964            | 2004               |
| 5,000-9,999    | 1969            | 2005               |
| 10,000-24,999  | 1938            | 2005               |
| 25,000-49,999  | 1943            | 2000               |
| 50,000 or more | 1953            | 2005               |
| All cities     | 1960            | 2003               |

Not surprisingly, a positive correlation also exists for city size and the total mileage of water lines as indicated in Table 4.8. These numbers are similar to the 2009 survey results. However, the average miles of water line for communities of 50,000 or more is less than in 2009.

**Table 4.8: Average Total Miles of Water Lines, Not Including Service/Laterals**

| City Size      | Miles |
|----------------|-------|
| <1,000         | 8     |
| 1,000-4,999    | 19    |
| 5,000-9,999    | 46    |
| 10,000-24,999  | 107   |
| 25,000-49,999  | 185   |
| 50,000 or more | 427   |
| All cities     | 76    |

## Wastewater System Highlights

### Rate Changes

Most cities have updated their wastewater rates within the last three years. The most common year in which cities last updated rates was 2014, and only three cities have not updated their rates in the last 10 years. The overall rate increased for 96 percent of cities, which is higher than the 2009 survey. These responses indicate that cities are providing up-to-date pricing, which shows customers that wastewater bills will increase over time. Only four cities decreased their rates. Within the rate change, more often than not, most of the rates increased. Smaller cities were more likely to experience increases and decreases within the rate change itself.

**Table 4.9: Average Year of Wastewater System Rate Changes & Number of Cities That Experienced Increases and Decreases in Rate Change**

| City Size      | Last Rate Change |      | Overall Rate |          | Some of the Rates Both Increased and Decreased |    |
|----------------|------------------|------|--------------|----------|------------------------------------------------|----|
|                | Avg. Year        | Mode | Increase     | Decrease | Yes                                            | No |
| <1,000         | 2013             | 2014 | 23           | 0        | 6                                              | 17 |
| 1,000-4,999    | 2013             | 2014 | 32           | 2        | 4                                              | 30 |
| 5,000-9,999    | 2012             | 2014 | 12           | 1        | 0                                              | 13 |
| 10,000-24,999  | 2014             | 2014 | 15           | 1        | 2                                              | 14 |
| 25,000-49,999  | 2014             | 2014 | 6            | 0        | 0                                              | 6  |
| 50,000 or more | 2014             | 2014 | 5            | 0        | 2                                              | 4  |
| All cities     | 2013             | 2014 | 93           | 4        | 14                                             | 84 |



The survey asked respondents to elaborate on why their rates increased and provided the option to select multiple reasons. Many catalysts are responsible for increased rates, with inflation/CPI and capital improvements being the highest. However, treatment and labor costs are also significant catalysts. Table 4.10 provides a further breakdown of the different reasons rates changed.

**Table 4.10: Number of Cities' Catalysts for Wastewater Rate Change**

| City Size      | State/ Federal Mandate | Inflation/CPI | Treatment Costs | Labor Costs | Capital Improvement | Reason Unknown | Other |
|----------------|------------------------|---------------|-----------------|-------------|---------------------|----------------|-------|
| <1,000         | 2                      | 9             | 11              | 8           | 15                  | 0              | 5     |
| 1,000-4,999    | 2                      | 16            | 7               | 8           | 11                  | 1              | 6     |
| 5,000-9,999    | 1                      | 5             | 5               | 5           | 6                   | 0              | 3     |
| 10,000-24,999  | 1                      | 11            | 5               | 4           | 9                   | 0              | 3     |
| 25,000-49,999  | 3                      | 6             | 3               | 3           | 5                   | 0              | 0     |
| 50,000 or more | 3                      | 5             | 4               | 4           | 4                   | 0              | 2     |
| All cities     | 12                     | 52            | 35              | 32          | 50                  | 1              | 19    |

Cities of less than 5,000 population are more likely to use a flat rate for wastewater or an “other” method, while cities between 5,000 and 49,999 population are likely to use a winter average of water consumption or a flat rate. Using a winter average of water consumption in summer months is more common than using all year round, except for cities of 50,000 population or more where all year is more common.

**Table 4.11: Number of Cities Using Types of Pricing Structures for Wastewater System**

| City Size      | Flat Rate | Winter average water consumption used |          | Other |
|----------------|-----------|---------------------------------------|----------|-------|
|                |           | Summer Months                         | All Year |       |
| <1,000         | 18        | 1                                     | 0        | 4     |
| 1,000-4,999    | 23        | 3                                     | 2        | 10    |
| 5,000-9,999    | 4         | 5                                     | 2        | 2     |
| 10,000-24,999  | 6         | 7                                     | 2        | 1     |
| 25,000-49,999  | 3         | 1                                     | 1        | 1     |
| 50,000 or more | 1         | 1                                     | 3        | 1     |
| All cities     | 55        | 18                                    | 10       | 19    |

## Average Wastewater Bill

The survey asked cities to indicate what a residential customer would be charged for using 5,000 gallons of water as measured by a three-fourths inch meter. Even though cities may offer different pricing structures that do not fit this scenario, this amount was chosen as a way to provide a best possible comparison among cities. If cities did not have a pricing structure that would allow them to bill for exactly 5,000 gallons, cities listed the lowest billing amount that would include the 5,000 gallons. The following results are presented both by city size and by region. The analysis consists of six regions: Coastal, Valley, Southern, Portland/Mt. Hood, Central, and Eastern.

It should be noted that the values reported below are just that, values. Assumptions cannot be made that a utility is in the black or red. In other words, a lower value does not necessarily suggest a utility is meeting its maintenance and operating costs and generating enough revenue to fund capital investments. Similarly, a higher value does not necessarily suggest a city is generating more revenue than it needs.

### City Size

The average wastewater bill stays somewhat consistent for all city sizes. By contrast, drinking water rates tend to decrease as city size increases. When adjusted for inflation, the average 2009 wastewater bill for all city sizes is less than the 2014 average wastewater bill (see Table 4.12). The amount the bill increased ranged from \$1.20 to \$10.93 depending on city size, and the average overall increase was \$4.25. An analysis of the data specific to cities with a population between 10,000 and 24,999 was unable to identify a common causal factor in the almost \$11 rate increase over the last five-year period. However, cities with a population of 25,000-49,999 represent some of the largest percentages of cities that have adjusted rates for inflation, treatment, labor costs and capital improvement compared to other city sizes. This may explain why that city size has an average increase of \$7.12 over the last five years.

Table 4.12 also shows the lowest and highest bill for each city size. The lowest bill was a city with a population less than 1,000, and the highest bill was a city with a population between 1,000 and 5,000. The information available for this survey limits an explanation for the lowest and highest cost. One possible explanation for the higher bill is that the city recently completed a facility upgrade in 2014. It appears that flat rate billing is a common pricing structure for both lower and higher wastewater bills. Eight out of 13 cities (62 percent) use flat rate billing when the wastewater bill is \$30 or less. Six out of 11 (55 percent) offer flat rate billing when a wastewater bill is \$60 or more. Three out of four cities (75 percent) with bills \$70 or more use flat rate billing.

**Table 4.12: Average Wastewater Bill for 5,000 gallons with a ¾" meter for a Residential Customer (Dollars)**

| City Size      | 2009 Adjusted* | 2014  | 2014 Low | 2014 High |
|----------------|----------------|-------|----------|-----------|
| <1,000         | 38.49          | 42.86 | 15.00    | 70.00     |
| 1,000-4,999    | 43.50          | 44.70 | 21.25    | 90.00     |
| 5,000-9,999    | 40.21          | 43.94 | 23.05    | 63.85     |
| 10,000-24,999  | 34.76          | 45.69 | 27.79    | 67.08     |
| 25,000-49,999  | 32.50          | 39.62 | 27.04    | 61.99     |
| 50,000 or more | 34.64          | 40.46 | 15.85    | 51.88     |
| All cities     | 39.59          | 43.84 | 15.00    | 90.00     |

\*Portland-Salem CPI-U used

## Region

As illustrated in Table 4.13, each region's average, highest and lowest bill is reported along with the range. Additionally, Appendix D provides charts of cities' reported water bills for each region. The Eastern region has the lowest average wastewater bill (\$40.25), and the Coastal region has the highest (\$51.18), making it almost 27 percent more expensive than the Eastern region. Similar to the results for city size, wastewater rates are pretty consistent among regions, except for the Coastal region, which has a significantly higher average cost per 5,000 gallons. The Central region houses the lowest wastewater bill (\$15) and the Southern region has the city with the highest bill (\$90).

While every region had a broad distribution of reported values, some notable differences exist. The Southern and Central regions are the only regions to have at least one city with a bill less than \$20. As depicted in Table 4.13, the Southern region has the largest range among all six regions, but it has the city with the highest wastewater bill in the state. When excluded, the range decreases to about \$40 and becomes comparable. Around \$55 is a point where many regions have a jump in price for their wastewater bill (see Appendix D). This is most obvious when viewing the distribution for the Coastal region. It has five cities with a wastewater bill over \$60, which is 36 percent of responding cities in that region. Almost all other regions only have about 10-13 percent of cities with bills greater than \$60.

**Table 4.13: Average Wastewater Bill for 5,000 gallons with a ¾" meter for a Residential Customer by Region (Dollars)**

| City Size         | 2014  | Low   | High  | Range |
|-------------------|-------|-------|-------|-------|
| Coastal           | 51.18 | 28.00 | 79.18 | 51.18 |
| Valley            | 45.44 | 30.00 | 70.00 | 40.00 |
| Southern          | 41.54 | 15.85 | 90.00 | 74.15 |
| Portland/Mt. Hood | 42.00 | 23.05 | 61.99 | 38.94 |
| Central           | 41.44 | 15.00 | 63.00 | 48.00 |
| Eastern           | 40.25 | 21.25 | 59.89 | 38.64 |
| All cities        | 43.84 | 15.00 | 90.00 | 75.00 |

## Programs and Treatment

With increases in population, the percentage of cities that have industrial wastewater pretreatment/program increases (Table 4.14). Cities of less than 1,000 had the lowest percentage at 6 percent and cities with a population of 10,000-24,999 and 50,000 or more had the highest percentage at 83 percent. No clear trend exists between city size and the percentage of cities that provide reclaimed water services. For biosolids, it appears that as city size increases the percentage of cities that apply biosolids also increases, with the exception of cities with a population of 25,000-49,999.

**Table 4.14: Percentage of Cities That Provide Additional Wastewater Services**

| City Size      | Industrial Wastewater Pretreatment/Program | Reclaimed Water | Biosolids |
|----------------|--------------------------------------------|-----------------|-----------|
| <1,000         | 6                                          | 37              | 20        |
| 1,000-4,999    | 20                                         | 26              | 36        |
| 5,000-9,999    | 11                                         | 78              | 38        |
| 10,000-24,999  | 83                                         | 18              | 42        |
| 25,000-49,999  | 80                                         | 20              | 20        |
| 50,000 or more | 83                                         | 33              | 50        |
| All cities     | 33                                         | 33              | 33        |

Primary treatment is predominantly the highest level of treatment for responding cities with a population of less than 1,000. However, as city size increases, more cities provide secondary treatment as their highest level of treatment increases. Advanced or tertiary treatment varies depending on the city size. Cities with populations ranging from 5,000 to 9,999 represent the largest percentage of cities using advanced/tertiary treatment (44.5 percent). Overall, nitrogen removal is more common than phosphorous removal shown in Table 4.15.

**Table 4.15: Percentage of Cities that Provide Highest Level of Treatment and Nitrogen & Phosphorous Removal**

| City Size      | Primary | Secondary | Advanced/Tertiary | Nitrogen Removal | Phosphorous Removal |
|----------------|---------|-----------|-------------------|------------------|---------------------|
| <1,000         | 54      | 38        | 8                 | 0                | 8                   |
| 1,000-4,999    | 27      | 52        | 21                | 24               | 17                  |
| 5,000-9,999    | 11      | 44.5      | 44.5              | 33               | 22                  |
| 10,000-24,999  | 22      | 67        | 11                | 11               | 11                  |
| 25,000-49,999  | 0       | 67        | 33                | 67               | 33                  |
| 50,000 or more | 0       | 67        | 33                | 17               | 0                   |
| All cities     | 26      | 52        | 22                | 20               | 14                  |

## Facilities and Infrastructure

The average year of the original construction of the facilities varies by city size and ranges from the mid-1960s to early 1980s. The 2014 survey results show that the smallest and largest city sizes have facilities that are relatively the same in age (34 and 33 years old), while cities with a population between 5,000 and 24,999 have facilities a decade older (46 and 49 years old). In contrast, the 2009 survey indicated the average age of treatment facilities for cities with a population of less than 1,000 was 19.5 years, and 40 years for cities with a population of 25,001 or more. This discrepancy could be attributed to the fact that different cities responded to the 2014 survey, which adjusted the average age. All city sizes, except those with populations between 1,000 and 9,999 had an upgrade in the last decade.

**Table 4.16: Average Age of Facility and Facility Upgrades**

| City Size      | Avg. Year Built | Avg. Year of Upgrade |
|----------------|-----------------|----------------------|
| <1,000         | 1980            | 2006                 |
| 1,000-4,999    | 1979            | 2001                 |
| 5,000-9,999    | 1968            | 1996                 |
| 10,000-24,999  | 1965            | 2005                 |
| 25,000-49,999  | 1977            | 2008                 |
| 50,000 or more | 1981            | 2010                 |
| All cities     | 1976            | 2003                 |

Like water systems, wastewater systems typically have more total miles of lines as city size increases. The average total miles of lines is greater for water than wastewater. Averages are similar to the 2009 survey except for cities with a population of 50,000 or more, where the 2014 average is lower by 200 miles. The lower 2014 average is because Portland, a city with more than 1,800 miles in sewer lines, was included in the 2009 average and not in 2014. If the 2009 average did not include Portland, it would be 349 miles, which is comparable to the 2014 average.

**Table 4.17: Average Total Miles of Sewer Lines, Not Including Laterals**

| City Size      | Miles |
|----------------|-------|
| <1,000         | 6     |
| 1,000-4,999    | 16    |
| 5,000-9,999    | 33    |
| 10,000-24,999  | 71    |
| 25,000-49,999  | 163   |
| 50,000 or more | 375   |
| All cities     | 68    |

Every two years the Oregon Department of Environmental Quality (DEQ) determines the condition of Oregon's waterbodies. Some waters have poor or concerning water quality conditions, and the term often used for these waters is water quality limited. When this is the case, a Total Maximum Daily Load (TMDL) is established, which is a calculated pollutant a waterbody can receive to still meet water quality standards. The DEQ requires cities discharging to these waters to take measures to improve water quality. In general, 45 percent of cities are discharging wastewater to a waterbody that is water quality limited or under special regulations. This is about the same percentage of communities as the 2009 survey. Cities with populations ranging from 10,000 to 24,999 have the highest percentage at 73 percent and cities 1,000-4,999 have the lowest at 31 percent (Table 4.18). Cities provide a short commentary on what they are doing to address their discharge into water quality limited waters in Table D.5 in Appendix D.

**Table 4.18: Percentage of Cities Releasing Into Waters Identified as Water Quality Limited or That Have Special Regulation**

| <b>City Size</b> | <b>TMDL*</b> |
|------------------|--------------|
| <1,000           | 33           |
| 1,000-4,999      | 31           |
| 5,000-9,999      | 56           |
| 10,000-24,999    | 73           |
| 25,000-49,999    | 50           |
| 50,000 or more   | 67           |
| All cities       | 45           |

\*TMDL: Total Maximum Daily Load

## Stormwater Systems

### Rate Changes

Most cities changed their stormwater rates in the last four years. Similar to water and wastewater rate updates, 2014 was the most common year for the last rate change for all city sizes, except cities with a population of less than 1,000 which did not have a mode. All cities except for one experienced an overall rate increase.

**Table 4.19: Average Year of Stormwater System Rate Changes and Number of Cities That Experienced Increases and Decreases in Rate Change**

| City Size      | Last Rate Change |      | Overall Rate Change |          |
|----------------|------------------|------|---------------------|----------|
|                | Avg. Year        | Mode | Increase            | Decrease |
| <1,000         | 2012             | -    | 1                   | 1        |
| 1,000-4,999    | 2013             | 2014 | 7                   | 0        |
| 5,000-9,999    | 2011             | 2014 | 7                   | 0        |
| 10,000-24,999  | 2013             | 2014 | 13                  | 0        |
| 25,000-49,999  | 2014             | 2014 | 3                   | 0        |
| 50,000 or more | 2012             | 2014 | 3                   | 0        |
| All cities     | 2013             | 2014 | 34                  | 1        |

The survey asked respondents to elaborate on why their rates increased and provided the option to select multiple reasons. Several factors are catalysts for change, with inflation/CPI and capital improvement being the most predominant catalysts. No cities indicated state/federal mandates as a reason for increasing rates.

**Table 4.20: Number of Cities Catalysts for Stormwater Rate Change**

| City Size      | State/Federal Mandate | Inflation/CPI | Treatment Costs | Labor Costs | Capital Improvement | Reason Unknown | Other | N/A |
|----------------|-----------------------|---------------|-----------------|-------------|---------------------|----------------|-------|-----|
| <1,000         | 0                     | 1             | 0               | 0           | 1                   | 0              | 1     | 1   |
| 1,000-4,999    | 0                     | 5             | 1               | 0           | 0                   | 0              | 1     | 6   |
| 5,000-9,999    | 0                     | 3             | 1               | 3           | 4                   | 0              | 3     | 1   |
| 10,000-24,999  | 0                     | 8             | 3               | 3           | 7                   | 0              | 3     | 1   |
| 25,000-49,999  | 0                     | 3             | 1               | 3           | 2                   | 0              | 1     | 2   |
| 50,000 or more | 0                     | 3             | 1               | 1           | 2                   | 0              | 3     | 0   |
| All cities     | 0                     | 23            | 7               | 10          | 16                  | 0              | 12    | 11  |

Many cities have stormwater rates as a separate utility fee. Only two cities include it in wastewater fees.

**Table 4.21: Stormwater Rates**

| City Size      | Separate Utility Fee | No fee | Included in Wastewater | Other |
|----------------|----------------------|--------|------------------------|-------|
| <1,000         | 2                    | 2      | 0                      | 1     |
| 1,000-4,999    | 7                    | 5      | 0                      | 4     |
| 5,000-9,999    | 11                   | 2      | 0                      | 0     |
| 10,000-24,999  | 9                    | 1      | 2                      | 1     |
| 25,000-49,999  | 5                    | 0      | 0                      | 0     |
| 50,000 or more | 4                    | 0      | 0                      | 1     |
| All cities     | 38                   | 10     | 2                      | 7     |

As shown in Table 4.22, as city size increases, cities are more likely to offer stormwater reductions/credits. Similarly, as city size increases, the monthly payment amount increases.

**Table 4.22: Percentage of Cities That Offer Stormwater Rate Reductions/Credits and Average Monthly Payment**

| City Size      | Reduction/Credits Offered | Avg. EDU Monthly Payment |
|----------------|---------------------------|--------------------------|
| <1,000         | 0                         | \$2.75                   |
| 1,000-4,999    | 0                         | \$2.30                   |
| 5,000-9,999    | 15                        | \$3.50                   |
| 10,000-24,999  | 40                        | \$7.25                   |
| 25,000-49,999  | 60                        | \$7.84                   |
| 50,000 or more | 60                        | \$8.20                   |
| All cities     | 25                        | \$4.78                   |

## System Characteristics

Cities with larger populations have more miles of piped system, open channel, ditches and swales. This is expected given that the area of a city generally increases as the city population increases. Cities with a population of 50,000 or more have the largest miles of open channel, ditches and swales at 257 miles.

The average square feet of residential established dwelling units (EDU) ranges from 940 square feet to 2,974 square feet. Cities with the lowest square footage of residential EDUs are those less than 1,000 population. Cities with a population of 5,000-9,999 had the highest average square feet at 3,207.



**Table 4.23: Average Miles of Stormwater System and Square Footage of Dwelling Units**

| <b>City Size</b> | <b>Miles of Piped System</b> | <b>Miles of Open Channel, Ditches, &amp; Swales</b> | <b>Square Feet of Residential EDU</b> |
|------------------|------------------------------|-----------------------------------------------------|---------------------------------------|
| <1,000           | 4                            | 4                                                   | 940                                   |
| 1,000-4,999      | 8                            | 3                                                   | 1,250                                 |
| 5,000-9,999      | 34                           | 14                                                  | 3,207                                 |
| 10,000-24,999    | 52                           | 13                                                  | 2,777                                 |
| 25,000-49,999    | 123                          | 53                                                  | 2,407                                 |
| 50,000 or more   | 257                          | 84                                                  | 2,974                                 |
| All cities       | 56                           | 19                                                  | 2,382                                 |

## CHAPTER 5: ASSET MANAGEMENT

Many cities are starting to use asset management, defined by the Environmental Protection Agency (EPA) as, “the practice of managing infrastructure capital assets to minimize the total cost of owning and operating them while delivering the desired service levels.”<sup>2</sup> Many agencies, like the EPA, devote programmatic and funding resources to aide communities in developing asset management programs. Part of the survey examines how many Oregon cities are utilizing asset management for water, wastewater and stormwater. The following results do not include cities who responded “not applicable” (N/A).

### Water

In general, as the city size increases, the percentage of cities with a water asset management plan also increases. All cities that responded with populations of 25,000 or more have a water asset management plan. Cities of 1,000-4,999 population have the lowest percentage at 31 percent. Cities with a population of less than 1,000 have the second lowest percentage at 39 percent, but surprisingly have the highest percentage of adequately funded plans (67percent) along with cities with a population of 10,000-24,999.

Compared to the 2009 survey results:

- The percentage of responding cities that have an asset management plan for water has decreased for cities with less than 5,000 in population, and has increased in cities greater than 5,000 in population, with the exception of cities within 10,000-25,000 population which experience a slight decline.
- The percentage of responding cities that have adequately funded plans has decreased for those with population ranging from 1,000-4,999, and for those with populations of 25,000 or more.
- The percentage of responding cities with adequately funded plans with populations of <1,000, 5,000-9,999, and 10,000-24,999 has significantly increased.

**Table 5.1: Percentage of Cities with Water Asset Management Plans**

| City Size      | % Have Plans | % Adequately Funded | Total Responses |
|----------------|--------------|---------------------|-----------------|
| <1,000         | 39           | 67                  | 23              |
| 1,000-4,999    | 31           | 22                  | 29              |
| 5,000-9,999    | 73           | 38                  | 11              |
| 10,000-24,999  | 82           | 67                  | 11              |
| 25,000-49,999  | 100          | 40                  | 5               |
| 50,000 or more | 100          | 50                  | 4               |
| All cities     | 53           | 48                  | 83              |

<sup>2</sup> [http://water.epa.gov/infrastructure/sustain/asset\\_management.cfm](http://water.epa.gov/infrastructure/sustain/asset_management.cfm)

## Wastewater

Once a city grows to a population of 5,000 or more, there is a drastic increase in the percentage of cities that have a wastewater asset management plan. Cities with a population ranging from 25,000 to 49,000 had the highest percentage at 100 percent, while cities with a population less than 1,000 had the lowest at 31 percent. Surprisingly, 80 percent of the small cities that have wastewater asset management plans have adequate funding for them as illustrated in Table 5.2. Cities with a population range of 1,000 to 4,999 have the lowest percentage of cities with funding at 11 percent, followed by cities of 50,000 or more at 33 percent.

Compared to the 2009 survey results:

- The percentage of responding cities that have a wastewater asset management plan has decreased for cities with a population of less than 5,000.
- The percentage of responding cities that have a wastewater asset management plan has stayed the same roughly or has increased for cities with populations of 5,000 or more (note: 10,000-24,999 had a 4 percent decrease).
- The percentage of responding cities with adequate funding has increased for all population categories except 1,000-4,999 and 50,000 or more.

**Table 5.2: Percentage of Cities with Wastewater Asset Management Plans**

| City Size      | % Have Plans | % Adequately Funded | Total Responses |
|----------------|--------------|---------------------|-----------------|
| <1,000         | 31           | 80                  | 16              |
| 1,000-4,999    | 33           | 11                  | 27              |
| 5,000-9,999    | 75           | 50                  | 8               |
| 10,000-24,999  | 80           | 75                  | 10              |
| 25,000-49,999  | 100          | 60                  | 5               |
| 50,000 or more | 75           | 33                  | 4               |
| All cities     | 51           | 50                  | 70              |

## Stormwater

As indicated earlier, many small cities did not provide stormwater services, so it is not surprising to see that relatively few cities with population sizes less than 5,000 have stormwater asset management plans. All cities that responded with a population between 25,000 and 49,999 had a stormwater asset management plan as shown in Table 5.3. Cities with a population range of 10,000 to 24,999 have the highest percentage of adequately funded plans at 71 percent.

Compared to the 2009 survey results:

- The percentage of responding cities that have a stormwater asset management plan decreased for cities with a population of less than 5,000 and 10,000 to 24,999.
- With the exception of cities with a population of less than 5,000, the percentage of responding cities with adequately funded plans has increased.

**Table 5.3: Percentage of Cities with Stormwater Asset Management Plans**

| City Size      | % Have Plans | % Adequately Funded | Total Responses |
|----------------|--------------|---------------------|-----------------|
| <1,000         | 0            | 0                   | 8               |
| 1,000-4,999    | 20           | 0                   | 20              |
| 5,000-9,999    | 67           | 33                  | 9               |
| 10,000-24,999  | 64           | 71                  | 22              |
| 25,000-49,999  | 100          | 60                  | 5               |
| 50,000 or more | 67           | 50                  | 3               |
| All cities     | 43           | 46                  | 56              |

## Asset Management Conclusions

Based on the survey results, water asset management plans are the most common (53 percent of respondents reported having a water asset management plan), followed by wastewater (51 percent) and then stormwater (43 percent). Compared to 2009, for smaller cities that do have plans, the percentage reporting adequate funding has increased. There was a slight decrease in the percentage of cities with a population between 10,000 and 24,999 that have asset management plans. Note that these differences could be related to different cities responding to the survey in 2009 and 2014.

## **APPENDIX A: SURVEY DESIGN & ADMINISTRATION**

The Community Service Center (CSC) worked with the League and a focus group to revise the 2009 survey in preparation for the 2014 version. Through the survey design process, the CSC and the League hosted three phone conferences with the focus group to develop new questions, review and revise questions from previous surveys, and discuss survey administration strategies.

After gathering feedback, the CSC transferred the survey questions into Qualtrics, an online survey vendor that the University of Oregon uses. The CSC gave the survey link for review and comment to League staff and focus group members. After initial review of the online format, the CSC asked the focus group to take a pilot survey to test for organization, question order and content. The pilot consisted of two rounds of review. The goal of these reviews, once the survey was in online format, was to improve focus and clarity of the questions.

To administer the actual survey, League staff provided a list of city managers/administrators or appropriate counterparts for all Oregon cities. The CSC used these contacts to send the survey link to 240 Oregon cities. The survey invitation described the survey, its significance, and how to complete it. The city manager/administrator or appropriate counterpart was asked to forward the survey to appropriate city staff. To help facilitate that process, the CSC included previously identified city staff contacts for water, wastewater, and stormwater from a preliminary survey. Anticipating that some cities had multiple contacts, the CSC designed the survey so multiple people from the same city could work in the same survey response. Thus, each city only had one submission.

### **Limitations of the Survey Data**

As communicated in the 2009 survey, limitations exist due to the informational and voluntary nature of the survey. The responses are not representative of a statistically significant or scientifically valid data set. Because the responses are voluntary, one cannot draw conclusions about similar cities that did not participate. Even for the cities that did respond, it is not accurate to make comparisons for similarly sized systems due to differences in population served, physical design, economic climate, rates and charges, among other unique characteristics.

### **Data Editing and Analysis**

Data editing involved review and adjustment of the data collected from survey respondents. The purpose of the editing was to control the quality of the data and foster accurate city representation. This included converting values into appropriate units or rates and interpreting vague data. Editing was a two-step process. The first step involved unit conversions for all values that were not submitted in the desired unit. Sometimes, assumptions were necessary to convert the data into the desired format. The second step involved flagging all data that was unclear or anomalous. If a city had flagged values, they had the opportunity to review the data and correct or confirm the value.

Data analysis involved calculating averages, percentages, and counts among other methods for various survey questions. Results were categorized into five city populations:

- Less than 1,000;
- 1,000-4,999;
- 5,000-9,999;
- 10,000-24,999;

- 25,000-49,999; and
- 50,000 or more.

Given the length of the survey, not all questions are discussed in the main report. However, the appendices present additional survey data that include some data analysis.

The survey included one question for water and wastewater asking cities how much a residential customer would pay for 5,000 gallons of water or wastewater using a three-quarter inch meter. A handful of cities noted that they used bi-monthly billing. Often this led to a significantly higher value reported than cities that use monthly billing. To make the best comparisons among cities and minimize unfair speculation, the cities using bi-monthly values were adjusted if the city did not adjust them already. Flat rate bi-monthly cities were halved to reflect a monthly flat rate. For bi-monthly cities that had a service fee in addition to usage fees, adjustments were only made to the basic service charge for these cities. The usage fee was maintained.

## APPENDIX B: OVERALL RATE CHARACTERISTICS

The average year does not take into account cities that listed more than 10 years since their last update.

### Water

- Only 16 cities conducted a rate study more than 10 years ago, 10 of those cities are less than 5,000 in population. Twenty cities conducted a methodology study more than 10 years ago. Seventeen of those cities are less than 10,000 in population.

### Wastewater

- Only 14 cities conducted a rate study more than 10 years ago, 12 of those cities are less than 10,000 in population. Nineteen cities conducted a methodology study more than 10 years ago, 13 are less than 10,000 in population.

### Stormwater

- Only nine cities conducted a rate study more than 10 years ago, seven of these cities are less than 5,000 in population. Eight cities conducted a methodology study more than 10 years ago; six of these cities are less than 10,000 in population.

**Table B.1: Latest Water Rate Study & Methodology Update**

| City Size      | Water                |                       |     | Wastewater |             |     | Stormwater    |              |     |
|----------------|----------------------|-----------------------|-----|------------|-------------|-----|---------------|--------------|-----|
|                | Avg. Year Rate Study | Avg. Year Methodology | N/A | Rate Study | Methodology | N/A | Rate Study    | Methodology  | N/A |
| <1,000         | 2011                 | 2010                  | 7   | 2011       | 2011        | 13  | > 10 yrs. ago | >10 yrs. ago | 24  |
| 1,000-4,999    | 2011                 | 2011                  | 3   | 2010       | 2010        | 6   | 2009          | 2010         | 25  |
| 5,000-9,999    | 2010                 | 2011                  | 0   | 2011       | 2011        | 2   | 2008          | 2009         | 2   |
| 10,000-24,999  | 2012                 | 2012                  | 1   | 2012       | 2011        | 2   | 2011          | 2011         | 0   |
| 25,000-49,999  | 2011                 | 2012                  | 0   | 2011       | 2011        | 0   | 2010          | 2011         | 1   |
| 50,000 or more | 2010                 | 2009                  | 0   | 2014       | 2013        | 1   | 2012          | 2011         | 2   |
| All cities     | 2011                 | 2011                  | 11  | 2011       | 2011        | 24  | 2010          | 2010         | 54  |

| CityPopulation    |     | Water        |              |     | Wastewater |              |     | Stormwater   |             |     |
|-------------------|-----|--------------|--------------|-----|------------|--------------|-----|--------------|-------------|-----|
|                   |     | Rate Study   | Methodology  | N/A | Rate Study | Methodology  | N/A | Rate Study   | Methodology | N/A |
| City Sizes <1,000 |     |              |              |     |            |              |     |              |             |     |
| Lonerock          | 34  | >10 yrs. ago |              |     | N/A        |              |     | N/A          |             |     |
| Monument          | 130 | 2014         | >10 yrs. ago |     | 2014       | >10 yrs. ago |     | N/A          |             |     |
| Idanha            | 135 |              |              |     |            |              |     |              |             |     |
| Detroit           | 205 | 2009         | 2006         |     |            |              |     |              |             |     |
| Sumpter           | 205 |              |              |     |            |              |     |              |             |     |
| Waterloo          | 230 | N/A          |              |     | N/A        |              |     | N/A          |             |     |
| Ukiah             | 235 | 2005         | N/A          |     | 2011       | N/A          |     | N/A          |             |     |
| Lexington         | 255 | N/A          |              |     | N/A        |              |     | N/A          |             |     |
| Westfir           | 255 |              |              |     |            |              |     |              |             |     |
| Nehalem           | 280 | 2010         | 2010         |     | N/A        |              |     | N/A          |             |     |
| Sodaville         | 310 | 2014         | 2014         |     | N/A        |              |     | N/A          |             |     |
| Moro              | 325 | 2010         |              |     | 2010       |              |     |              |             |     |
| Ione              | 330 |              |              |     |            |              |     |              |             |     |
| Adams             | 350 | 2012         | N/A          |     | N/A        |              |     | N/A          |             |     |
| Scotts Mills      | 364 | 2011         |              |     | N/A        |              |     | N/A          |             |     |
| Haines            | 415 | N/A          |              |     | N/A        |              |     | N/A          |             |     |
| St. Paul          | 416 | 2011         |              |     | 2010       |              |     | >10 yrs. ago |             |     |
| Mosier            | 433 | 2006         | 2006         |     | 2014       | 2014         |     | N/A          |             |     |
| Rivergrove        | 445 | N/A          |              |     | N/A        |              |     | N/A          |             |     |
| Huntington        | 445 | 2012         | N/A          |     | 2013       | N/A          |     | N/A          |             |     |
| Fossil            | 475 |              |              |     |            |              |     |              |             |     |
| Gates             | 485 |              |              |     |            |              |     |              |             |     |
| Mount Vernon      | 525 | 2010         |              |     | 2010       |              |     | N/A          |             |     |



| City                            | Population | Water        |              |     | Wastewater   |              |     | Stormwater   |              |     |
|---------------------------------|------------|--------------|--------------|-----|--------------|--------------|-----|--------------|--------------|-----|
|                                 |            | Rate Study   | Methodology  | N/A | Rate Study   | Methodology  | N/A | Rate Study   | Methodology  | N/A |
| Cove                            | 550        | 2010         |              |     | 2014         |              |     |              |              |     |
| Manzanita                       | 615        | 2014         | 2014         |     |              |              | N/A |              |              | N/A |
| Arlington                       | 619        | 2014         |              |     | 2014         |              |     |              |              | N/A |
| Weston                          | 675        | 2013         | 2014         |     |              |              |     |              |              | N/A |
| Condon                          | 685        | >10 yrs. ago | >10 yrs. ago |     | >10 yrs. ago | >10 yrs. ago |     |              |              | N/A |
| Powers                          | 695        | 2011         | 2011         |     | 2012         | 2012         |     |              |              | N/A |
| Echo                            | 705        |              |              |     |              |              |     |              |              | N/A |
| Yachats                         | 800        | >10 yrs. ago | >10 yrs. ago |     | 2008         | 2008         |     | >10 yrs. ago | >10 yrs. ago |     |
| Malin                           | 815        | >10 yrs. ago | >10 yrs. ago |     |              |              |     |              |              | N/A |
| Merrill                         | 845        | 2010         |              |     | 2010         |              |     |              |              |     |
| Adair Village                   | 850        | 2012         |              |     |              |              | N/A |              |              | N/A |
| Glendale                        | 874        | 2012         |              |     | 2012         |              |     |              |              | N/A |
| Prairie City                    | 910        |              |              |     |              |              |     |              |              |     |
| Halsey                          | 917        | 2014         |              |     |              |              |     |              |              |     |
| Falls City                      | 950        | >10 yrs. ago | >10 yrs. ago |     | >10 yrs. ago | >10 yrs. ago |     | >10 yrs. ago | >10 yrs. ago |     |
| Oakland                         | 980        | 2005         | 2005         |     | 2008         | 2008         |     |              |              | N/A |
| Donald                          | 980        |              |              |     |              |              |     |              |              |     |
| <b>City Sizes 1,000 - 4,999</b> |            |              |              |     |              |              |     |              |              |     |
| Island City                     | 1,015      | 2014         | 2013         |     | >10 yrs. ago |              |     |              |              | N/A |
| Yamhill                         | 1,020      |              |              |     |              |              |     |              |              | N/A |
| Yoncalla                        | 1,060      | >10 yrs. ago | 2014         |     | >10 yrs. ago | 2014         |     |              |              | N/A |
| Joseph                          | 1,090      | >10 yrs. ago |              |     | >10 yrs. ago |              |     |              |              |     |
| Athena                          | 1,125      | >10 yrs. ago | >10 yrs. ago |     | 2010         | 2010         |     |              |              | N/A |
| Port Orford                     | 1,135      | 2012         |              |     | 2012         |              |     |              |              |     |

| City           | Population | Water      |              |     | Wastewater   |              |     | Stormwater   |              |     |
|----------------|------------|------------|--------------|-----|--------------|--------------|-----|--------------|--------------|-----|
|                |            | Rate Study | Methodology  | N/A | Rate Study   | Methodology  | N/A | Rate Study   | Methodology  | N/A |
| Riddle         | 1,185      | 2010       | 2011         |     | 2011         | 2012         |     | >10 yrs. ago |              | N/A |
| Cascade Locks  | 1,200      | 2014       | 2014         |     | 2006         | 2006         |     |              |              | N/A |
| Gold Hill      | 1,220      | 2009       |              |     | >10 yrs. ago |              |     | >10 yrs. ago |              |     |
| Siletz         | 1,290      | 2014       |              |     | 2014         |              |     |              |              | N/A |
| Heppner        | 1,290      | 2011       | 2011         |     | 2014         | 2014         |     | 2006         |              | N/A |
| Dunes City     | 1,310      |            |              | N/A |              |              | N/A |              |              | N/A |
| Bay City       | 1,310      |            |              |     |              |              |     |              |              |     |
| Rockaway Beach | 1,325      |            |              |     |              |              |     |              |              |     |
| Culver         | 1,370      |            |              | N/A |              |              | N/A |              |              | N/A |
| Depoe Bay      | 1,405      | 2010       | 2009         |     | 2010         | 2009         |     |              | 2009         | N/A |
| Gearhart       | 1,465      | 2010       |              |     |              |              | N/A |              |              | N/A |
| Hines          | 1,565      |            |              | N/A |              |              | N/A |              |              | N/A |
| La Pine        | 1,670      |            |              |     |              |              |     |              |              |     |
| Brownsville    | 1,670      |            |              |     |              |              |     |              |              |     |
| Lakeside       | 1,705      |            |              |     |              |              |     |              |              |     |
| Clatskanie     | 1,729      | 2012       | >10 yrs. ago |     | 2012         | >10 yrs. ago |     | 2008         | >10 yrs. ago |     |
| John Day       | 1,745      | 2009       | 2009         |     | 2009         | 2009         |     |              |              | N/A |
| Banks          | 1,785      | 2009       | 2009         |     |              |              | N/A |              |              | N/A |
| Irrigon        | 1,835      | 2006       | 2006         |     | 2006         | 2006         |     |              |              | N/A |
| Columbia City  | 1,945      | 2013       | >10 yrs. ago |     | 2013         | >10 yrs. ago |     |              |              | N/A |
| Vale           | 1,976      | 2014       |              |     | 2007         |              |     | >10 yrs. ago |              |     |
| Waldport       | 2,080      |            |              |     |              |              |     |              |              |     |
| Rogue River    | 2,145      |            |              |     |              |              |     |              |              |     |
| Union          | 2,240      | 2006       | 2012         |     | >10 yrs. ago | 2014         |     |              |              | N/A |

| City                            | Population | Water        |              |     | Wastewater   |              |     | Stormwater   |              |     |
|---------------------------------|------------|--------------|--------------|-----|--------------|--------------|-----|--------------|--------------|-----|
|                                 |            | Rate Study   | Methodology  | N/A | Rate Study   | Methodology  | N/A | Rate Study   | Methodology  | N/A |
| Vernonia                        | 2,450      | 2013         |              |     | 2013         |              |     |              |              | N/A |
| Lakeview                        | 2,490      | >10 yrs. ago | >10 yrs. ago |     | >10 yrs. ago | >10 yrs. ago |     |              |              | N/A |
| Gervais                         | 2,520      |              |              |     |              |              |     |              |              |     |
| Myrtle Point                    | 2,525      |              | 2014         |     |              | 2014         |     |              |              | N/A |
| Jacksonville                    | 2,840      |              |              |     |              |              |     |              |              |     |
| Estacada                        | 2,880      |              | 2010         |     |              | >10 yrs. ago |     |              | 2010         |     |
| Bandon                          | 3,100      | >10 yrs. ago | >10 yrs. ago |     | >10 yrs. ago | >10 yrs. ago |     | >10 yrs. ago | >10 yrs. ago |     |
| Nyssa                           | 3,200      |              |              |     |              |              |     |              |              |     |
| Mt. Angel                       | 3,300      | 2008         | 2008         |     | 2008         | 2008         |     | 2008         | 2008         |     |
| Boardman                        | 3,405      |              |              |     |              |              |     |              |              |     |
| Toledo                          | 3,465      | 2012         | 2012         |     | >10 yrs. ago | >10 yrs. ago |     | 2010         |              | N/A |
| Aumsville                       | 3,750      | 2009         |              |     | 2005         |              |     |              |              | N/A |
| Coquille                        | 3,865      | 2011         | 2011         |     | 2006         | 2006         |     |              |              | N/A |
| Wood Village                    | 3,875      | 2014         | >10 yrs. ago |     | 2014         | 2010         |     | 2014         | 2013         |     |
| Phoenix                         | 4,585      | 2013         |              |     |              |              | N/A |              |              | N/A |
| Philomath                       | 4,625      |              |              |     |              |              |     |              |              |     |
| Veneta                          | 4,635      |              |              |     |              |              |     |              |              |     |
| <b>City Sizes 5,000 - 9,999</b> |            |              |              |     |              |              |     |              |              |     |
| Creswell                        | 5,031      | 2006         | 2006         |     | >10 yrs. ago | >10 yrs. ago |     |              |              | N/A |
| Warrenton                       | 5,050      | 2007         |              |     |              |              |     |              |              |     |
| Sheridan                        | 6,170      | 2013         | >10 yrs. ago |     | 2013         | >10 yrs. ago |     | 2006         | >10 yrs. ago |     |
| Talent                          | 6,170      | >10 yrs. ago | >10 yrs. ago |     |              |              | N/A |              |              | N/A |
| Madras                          | 6,255      |              |              |     |              |              |     |              |              |     |
| Sutherlin                       | 7,930      |              |              |     |              |              |     |              |              |     |

| City                              | Population | Water        |              |     | Wastewater   |              |     | Stormwater   |              |     |
|-----------------------------------|------------|--------------|--------------|-----|--------------|--------------|-----|--------------|--------------|-----|
|                                   |            | Rate Study   | Methodology  | N/A | Rate Study   | Methodology  | N/A | Rate Study   | Methodology  | N/A |
| Molalla                           | 8,200      | >10 yrs. ago | >10 yrs. ago |     | 2007         | 2007         |     | >10 yrs. ago | >10 yrs. ago |     |
| Florence                          | 8,466      | 2009         |              |     | 2009         |              |     |              |              |     |
| Eagle Point                       | 8,575      | 2009         | >10 yrs. ago |     |              |              | N/A | 2009         | 2009         |     |
| Independence                      | 8,585      | 2011         | 2013         |     | 2011         | 2013         |     | 2005         |              |     |
| Sweet Home                        | 9,065      | >10 yrs. ago | >10 yrs. ago |     | >10 yrs. ago | >10 yrs. ago |     | 2006         | 2006         |     |
| Silverton                         | 9,330      |              | 2013         |     |              | 2013         |     |              | 2013         |     |
| Astoria                           | 9,500      |              |              |     |              |              |     |              |              |     |
| Cottage Grove                     | 9,785      | 2010         | 2010         |     | 2010         | 2010         |     | 2010         | 2010         |     |
| Sandy                             | 9,980      | 2014         | >10 yrs. ago |     | 2014         | >10 yrs. ago |     | 2009         | 2005         |     |
| <b>City Sizes 10,000 - 24,999</b> |            |              |              |     |              |              |     |              |              |     |
| Gladstone                         | 11,495     |              |              |     |              |              |     |              |              |     |
| Cornelius                         | 12,161     | 2013         | 2013         |     | 2013         | 2013         |     | 2013         | 2013         |     |
| St. Helens                        | 12,895     | 2011         | 2008         |     | 2011         | 2008         |     | 2011         | 2008         |     |
| The Dalles                        | 14,400     | 2012         | 2012         |     | 2013         | 2013         |     | 2007         | 2007         |     |
| Dallas                            | 14,800     | 2013         | 2013         |     | 2013         | 2013         | N/A |              |              |     |
| Lebanon                           | 15,660     | 2010         |              |     | 2010         |              |     | 2012         |              |     |
| Troutdale                         | 16,015     |              |              |     |              |              |     |              |              |     |
| Coos Bay                          | 16,160     |              |              | N/A | 2014         | >10 yrs. ago |     |              |              |     |
| Pendleton                         | 16,600     | 2014         | 2014         |     | 2014         | 2014         |     | 2014         | 2014         |     |
| Sherwood                          | 18,771     | 2013         | 2014         |     | 2006         | 2006         |     | 2006         | 2006         |     |
| Ashland                           | 20,295     | >10 yrs. ago | >10 yrs. ago |     | 2012         | >10 yrs. ago |     | >10 yrs. ago | >10 yrs. ago |     |
| Milwaukie                         | 20,500     |              |              |     |              |              |     |              |              |     |
| Klamath Falls                     | 21,200     |              |              |     |              |              |     |              |              |     |
| Wilsonville                       | 21,550     | 2014         | 2014         |     | 2011         | >10 yrs. ago |     | 2012         | >10 yrs. ago |     |

| City                              | Population | Water        |              |     | Wastewater   |              |     | Stormwater |              |     |
|-----------------------------------|------------|--------------|--------------|-----|--------------|--------------|-----|------------|--------------|-----|
|                                   |            | Rate Study   | Methodology  | N/A | Rate Study   | Methodology  | N/A | Rate Study | Methodology  | N/A |
| Forest Grove                      | 22,000     | 2010         | 2010         |     | 2010         | 2010         |     | 2010       | 2010         |     |
| Roseburg                          | 22,275     | >10 yrs. ago | >10 yrs. ago |     |              |              | N/A | 2013       | 2013         |     |
| Newberg                           | 22,396     | 2014         | 2014         |     | 2014         | 2014         |     | 2014       | 2014         |     |
| <b>City Sizes 25,000 - 49,999</b> |            |              |              |     |              |              |     |            |              |     |
| West Linn                         | 25,425     | 2011         | 2011         |     | 2008         | 2008         |     | 2008       | 2008         |     |
| Redmond                           | 26,590     | >10 yrs. ago | >10 yrs. ago |     | >10 yrs. ago | >10 yrs. ago |     | 2012       | 2012         |     |
| Oregon City                       | 33,390     | 2009         |              |     | 2014         |              |     | 2012       |              |     |
| Grants Pass                       | 35,000     | 2007         | 2013         |     | 2007         | 2012         |     |            |              | N/A |
| Lake Oswego                       | 36,990     | 2013         | 2010         |     | 2011         | >10 yrs. ago |     | 2007       | >10 yrs. ago |     |
| Tigard                            | 49,135     | 2013         | 2014         |     | 2013         | 2014         |     | 2013       | 2014         |     |
| <b>City Sizes 50,000 or more</b>  |            |              |              |     |              |              |     |            |              |     |
| Albany                            | 50,720     | 2005         | 2005         |     | >10 yrs. ago | >10 yrs. ago |     |            |              | N/A |
| Springfield                       | 59,990     |              |              |     |              |              |     |            |              |     |
| Medford                           | 76,300     | 2011         | 2009         |     | 2014         | 2014         |     | 2010       | 2010         |     |
| Bend                              | 81,000     |              |              |     |              |              |     |            |              |     |
| Hillsboro                         | 81,310     |              |              |     |              |              |     |            |              |     |
| Beaverton                         | 93,000     |              |              |     |              |              | N/A |            |              | N/A |
| Salem                             | 157,888    | 2014         | 2012         |     | 2014         | 2012         |     | 2014       | 2012         |     |
| Portland                          | 592,120    |              |              |     |              |              |     |            |              |     |

**Table B.2: Percent of Rate Revenue Obligated to Debt Service**

| City Size      | Average Percent of Rate Revenue Obligated |            |            |
|----------------|-------------------------------------------|------------|------------|
|                | Water                                     | Wastewater | Stormwater |
| <1,000         | 26                                        | 33         | 0.4        |
| 1,000-4,999    | 15                                        | 20         | 0.0        |
| 5,000-9,999    | 31                                        | 25         | 11         |
| 10,000-24,999  | 20                                        | 18         | 4          |
| 25,000-49,999  | 11                                        | 24         | 5          |
| 50,000 or more | 22                                        | 28         | 30         |
| All cities     | 21                                        | 24         | 4          |

| City              | Population | Water     |     | Wastewater |     | Stormwater |     |
|-------------------|------------|-----------|-----|------------|-----|------------|-----|
|                   |            | (percent) | N/A | (percent)  | N/A | (percent)  | N/A |
| City Sizes <1,000 |            |           |     |            |     |            |     |
| Lonerock          | 34         | 100       |     |            | N/A |            | N/A |
| Monument          | 130        | 0         |     | 60         |     |            | N/A |
| Idanha            | 135        |           | N/A |            |     |            |     |
| Detroit           | 205        | 25        |     |            | N/A |            | N/A |
| Sumpter           | 205        |           |     |            |     |            |     |
| Waterloo          | 230        |           | N/A |            | N/A |            | N/A |
| Ukiah             | 235        | 45        |     | 50         |     |            | N/A |
| Lexington         | 255        | 26        |     |            | N/A |            | N/A |
| Westfir           | 255        |           |     |            |     |            |     |
| Nehalem           | 280        | 26        |     |            | N/A |            | N/A |
| Sodaville         | 310        | 5         |     |            | N/A |            | N/A |
| Moro              | 325        | 5.25      |     | 15         |     |            | N/A |
| Ione              | 330        |           |     |            |     |            |     |
| Adams             | 350        | 20        |     |            | N/A |            | N/A |
| Scotts Mills      | 364        |           |     |            | N/A |            | N/A |
| Haines            | 415        | 4         |     | 35         |     | 0          | N/A |
| St. Paul          | 416        |           |     |            |     |            |     |
| Mosier            | 433        |           |     |            |     |            |     |
| Rivergrove        | 445        |           | N/A |            | N/A |            | N/A |
| Huntington        | 445        |           | N/A |            | N/A |            | N/A |
| Fossil            | 475        |           |     |            |     |            |     |
| Gates             | 485        |           |     |            | N/A |            | N/A |
| Mount Vernon      | 525        | 10        |     |            | N/A |            | N/A |

| City                            | Population | Water     |     | Wastewater |     | Stormwater |     |
|---------------------------------|------------|-----------|-----|------------|-----|------------|-----|
|                                 |            | (percent) | N/A | (percent)  | N/A | (percent)  | N/A |
| Cove                            | 550        | 25        |     | 15         |     | 0          |     |
| Manzanita                       | 615        | 23.5      |     |            | N/A |            | N/A |
| Arlington                       | 619        | 75        |     | 50         |     |            |     |
| Weston                          | 675        |           |     |            |     |            |     |
| Condon                          | 685        | 0         | N/A | 19         |     | 0          | N/A |
| Powers                          | 695        |           | N/A |            | N/A |            | N/A |
| Echo                            | 705        |           | N/A |            | N/A |            | N/A |
| Yachats                         | 800        |           | N/A |            | N/A |            | N/A |
| Malin                           | 815        |           | N/A |            | N/A |            | N/A |
| Merrill                         | 845        |           |     | 15         |     |            |     |
| Adair Village                   | 850        | 7.7       |     | 24         |     |            | N/A |
| Glendale                        | 874        | 38        |     | 62         |     | 0          |     |
| Prairie City                    | 910        |           |     |            |     |            |     |
| Halsey                          | 917        |           | N/A |            | N/A |            | N/A |
| Falls City                      | 950        |           |     |            | N/A |            | N/A |
| Oakland                         | 980        | 55        |     | 45         |     | 2          |     |
| Donald                          | 980        | 0         |     | 0          |     |            | N/A |
| <b>City Sizes 1,000 - 4,999</b> |            |           |     |            |     |            |     |
| Island City                     | 1,015      |           | N/A | 15         |     |            | N/A |
| Yamhill                         | 1,020      | 15        |     | 15         |     |            | N/A |
| Yoncalla                        | 1,060      | 4         |     | 15.75      |     |            | N/A |
| Joseph                          | 1,090      |           |     |            |     |            |     |
| Athena                          | 1,125      | 0         | N/A | 29.21      |     | 0          | N/A |
| Port Orford                     | 1,135      | 11.56     |     | 35.54      |     |            |     |
| Riddle                          | 1,185      |           |     |            |     |            | N/A |
| Cascade Locks                   | 1,200      | 0         |     | 24         |     |            | N/A |
| Gold Hill                       | 1,220      | 10        |     | 0          |     | 0          |     |
| Siletz                          | 1,290      |           |     |            |     |            | N/A |
| Heppner                         | 1,290      | 24        |     |            | N/A |            | N/A |
| Dunes City                      | 1,310      |           | N/A |            | N/A |            | N/A |
| Bay City                        | 1,310      |           |     |            |     |            |     |
| Rockaway Beach                  | 1,325      |           |     |            |     |            |     |
| Culver                          | 1,370      | 0         | N/A | 0          | N/A | 0          | N/A |
| Depoe Bay                       | 1,405      |           | N/A |            | N/A |            | N/A |
| Gearhart                        | 1,465      |           | N/A |            | N/A |            | N/A |
| Hines                           | 1,565      |           | N/A | 25         |     |            | N/A |
| La Pine                         | 1,670      |           |     |            |     |            |     |

| City                            | Population | Water     |     | Wastewater |     | Stormwater |     |
|---------------------------------|------------|-----------|-----|------------|-----|------------|-----|
|                                 |            | (percent) | N/A | (percent)  | N/A | (percent)  | N/A |
| Brownsville                     | 1,670      |           |     |            |     |            |     |
| Lakeside                        | 1705       |           |     |            |     |            |     |
| Clatskanie                      | 1,729      |           | N/A |            | N/A |            | N/A |
| John Day                        | 1,745      | 31        |     | 16         |     |            | N/A |
| Banks                           | 1,785      | 30        |     |            | N/A |            | N/A |
| Irrigon                         | 1,835      | 40        |     | 31         |     |            | N/A |
| Columbia City                   | 1,945      | 34        |     | 0          |     | 0          |     |
| Vale                            | 1,976      |           |     |            |     |            |     |
| Waldport                        | 2,080      |           |     |            |     |            |     |
| Rogue River                     | 2,145      |           |     |            |     |            |     |
| Union                           | 2,240      |           | N/A | 25         |     |            | N/A |
| Vernonia                        | 2,450      |           | N/A | 55         |     |            | N/A |
| Lakeview                        | 2,490      |           |     |            |     |            | N/A |
| Gervais                         | 2,520      |           |     |            |     |            |     |
| Myrtle Point                    | 2,525      | 24        |     | 35         |     |            | N/A |
| Jacksonville                    | 2,840      |           |     |            |     |            |     |
| Estacada                        | 2,880      | 0         |     | 2.85       |     | 0          |     |
| Bandon                          | 3,100      | 9.4       |     | 8.7        |     |            |     |
| Nyssa                           | 3,200      |           |     |            |     |            |     |
| Mt. Angel                       | 3,300      | 0         |     | 0          |     | 0          |     |
| Boardman                        | 3,405      |           |     |            |     |            |     |
| Toledo                          | 3,465      | 26        |     | 17         |     |            | N/A |
| Aumsville                       | 3,750      | 6         |     | 22         |     |            | N/A |
| Coquille                        | 3,865      | 17        |     | 54         |     |            | N/A |
| Wood Village                    | 3,875      |           | N/A |            | N/A |            | N/A |
| Phoenix                         | 4,585      | 11        |     |            | N/A |            | N/A |
| Philomath                       | 4,625      |           |     |            |     |            |     |
| Veneta                          | 4,635      |           |     |            |     |            |     |
| <b>City Sizes 5,000 - 9,999</b> |            |           |     |            |     |            |     |
| Creswell                        | 5,031      | 44        |     | 37         |     |            | N/A |
| Warrenton                       | 5,050      |           |     |            |     |            |     |
| Sheridan                        | 6,170      | 49        |     | 5          |     |            | N/A |
| Talent                          | 6,170      | 25.25     |     |            | N/A |            | N/A |
| Madras                          | 6,255      |           |     |            |     |            |     |
| Sutherlin                       | 7,930      |           |     |            |     |            |     |
| Molalla                         | 8,200      |           |     |            |     |            |     |
| Florence                        | 8,466      |           |     |            |     |            |     |



| City                              | Population | Water     |     | Wastewater |     | Stormwater |     |
|-----------------------------------|------------|-----------|-----|------------|-----|------------|-----|
|                                   |            | (percent) | N/A | (percent)  | N/A | (percent)  | N/A |
| Eagle Point                       | 8,575      |           |     |            | N/A | 0          |     |
| Independence                      | 8,585      |           | N/A | 10         |     |            | N/A |
| Sweet Home                        | 9,065      | 26        |     | 35         |     |            | N/A |
| Silverton                         | 9,330      | 12.4      |     | 28.6       |     |            | N/A |
| Astoria                           | 9,500      |           |     |            |     |            |     |
| Cottage Grove                     | 9,785      | 28.1      |     | 38.9       |     | 16         |     |
| Sandy                             | 9,980      | 30        |     | 21         |     | 16         |     |
| <b>City Sizes 10,000 - 24,999</b> |            |           |     |            |     |            |     |
| Gladstone                         | 11,495     |           |     |            |     |            |     |
| Cornelius                         | 12,161     |           | N/A |            | N/A |            | N/A |
| St. Helens                        | 12,895     | 17        |     | 14         |     | 14         |     |
| The Dalles                        | 14,400     | 16.6      |     | 12.4       |     |            | N/A |
| Dallas                            | 14,800     | 29        |     | 15         |     |            | N/A |
| Lebanon                           | 15,660     | 2.7       |     | 1.4        |     |            | N/A |
| Troutdale                         | 16,015     |           |     |            |     |            |     |
| Coos Bay                          | 16,160     |           | N/A | 6.8        |     |            | N/A |
| Pendleton                         | 16,600     | 15        |     | 32         |     | 0          |     |
| Sherwood                          | 18,771     | 41        |     | No debt    |     | No debt    |     |
| Ashland                           | 20,295     | 39        |     | 15         |     |            | N/A |
| Milwaukie                         | 20,500     |           |     |            |     |            |     |
| Klamath Falls                     | 21,200     |           |     |            |     |            |     |
| Wilsonville                       | 21,550     | 23        |     | 41         |     |            | N/A |
| Forest Grove                      | 22,000     |           | N/A |            | N/A |            | N/A |
| Roseburg                          | 22,275     | 0         |     |            | N/A | 0          |     |
| Newberg                           | 22,396     | 20        |     | 25         |     | 0          |     |
| <b>City Sizes 25,000 - 49,999</b> |            |           |     |            |     |            |     |
| West Linn                         | 25,425     | 2         |     |            | N/A |            | N/A |
| Redmond                           | 26,590     | 7         |     | 31         |     | 2          |     |
| Oregon City                       | 33,390     | 3.5       |     | 14         |     |            | N/A |
| Grants Pass                       | 35,000     | 9         |     | 16.1       |     |            | N/A |
| Lake Oswego                       | 36,990     | 33        |     | 52         |     | 10         |     |
| Tigard                            | 49,135     | 11        |     | 6          |     | 2          |     |
| <b>City Sizes 50,000 or more</b>  |            |           |     |            |     |            |     |
| Albany                            | 50,720     | 13        |     | 26         |     |            | N/A |
| Springfield                       | 59,990     |           |     |            |     |            |     |
| Medford                           | 76,300     |           | N/A |            | N/A |            | N/A |
| Bend                              | 81,000     |           |     |            |     |            |     |

| City      | Population | Water     |     | Wastewater |     | Stormwater |     |
|-----------|------------|-----------|-----|------------|-----|------------|-----|
|           |            | (percent) | N/A | (percent)  | N/A | (percent)  | N/A |
| Hillsboro | 81,310     |           |     |            |     |            |     |
| Beaverton | 93,000     | 23.3      |     |            | N/A |            | N/A |
| Salem     | 157,888    | 30        |     | 30         |     | 30         |     |
| Portland  | 592,120    |           |     |            |     |            |     |

## APPENDIX C: DRINKING WATER RATE STRUCTURE, PRICING AND SYSTEM CHARACTERISTICS

**Table C.1: Drinking Water Rate Structure & Cost per 5,000 gallons**

The average year does not take into account cities that listed over 10 years since their last update.

| City Size      | # of Responses | Avg. Last Year of Rate Change | Rate Structure |                      |                      |       | Average Cost per 5,000 gal. |
|----------------|----------------|-------------------------------|----------------|----------------------|----------------------|-------|-----------------------------|
|                |                |                               | Flat Rate      | Inclining Block Rate | Declining Block Rate | Other |                             |
| <1,000         | 35             | 2012                          | 15             | 10                   | 0                    | 10    | \$39.95                     |
| 1,000-4,999    | 40             | 2013                          | 11             | 11                   | 1                    | 17    | \$34.04                     |
| 5,000-9,999    | 15             | 2013                          | 5              | 3                    | 0                    | 7     | \$33.40                     |
| 10,000-24,999  | 16             | 2014                          | 3              | 6                    | 0                    | 7     | \$31.68                     |
| 25,000-49,999  | 6              | 2014                          | 1              | 2                    | 0                    | 3     | \$32.65                     |
| 50,000 or more | 6              | 2014                          | 2              | 1                    | 1                    | 2     | \$26.21                     |
| All cities     | 117            | 2013                          | 37             | 33                   | 2                    | 46    | \$34.88                     |

| City              | Population | Last Year of Rate Change | Rate structure |                      |                      |       | Average Cost per 5,000 gal. |
|-------------------|------------|--------------------------|----------------|----------------------|----------------------|-------|-----------------------------|
|                   |            |                          | Flat Rate      | Inclining Block Rate | Declining Block Rate | Other |                             |
| City Sizes <1,000 |            |                          |                |                      |                      |       |                             |
| Lonerock          | 34         | > 10 yrs. ago            |                |                      |                      | ✓     | \$10.00                     |
| Monument          | 130        | 2014                     | ✓              |                      |                      |       | \$22.75                     |
| Idanha            | 135        | 2014                     |                | ✓                    |                      |       | \$41.81                     |
| Detroit           | 205        | 2011                     |                |                      |                      | ✓     | \$45.00                     |
| Sumpter           | 205        |                          |                |                      |                      |       |                             |
| Waterloo          | 230        |                          |                |                      |                      |       |                             |

| City          | Population | Last Year of Rate Change | Rate structure |                      |                      |       | Average Cost per 5,000 gal. |
|---------------|------------|--------------------------|----------------|----------------------|----------------------|-------|-----------------------------|
|               |            |                          | Flat Rate      | Inclining Block Rate | Declining Block Rate | Other |                             |
| Ukiah         | 235        | 2006                     | ✓              |                      |                      |       | \$41.25                     |
| Lexington     | 255        | 2014                     |                | ✓                    |                      |       | \$33.00                     |
| Westfir       | 255        | 2012                     |                | ✓                    |                      |       | \$40.00                     |
| Nehalem       | 280        | 2010                     | ✓              |                      |                      |       | \$40.80                     |
| Sodaville     | 310        | 2014                     |                |                      |                      | ✓     | \$60.00                     |
| Moro          | 325        | 2014                     | ✓              |                      |                      |       |                             |
| Ione          | 330        | 2014                     | ✓              |                      |                      |       | \$40.00                     |
| Adams         | 350        | 2013                     |                | ✓                    |                      |       | \$42.50                     |
| Scotts Mills  | 364        | 2011                     |                |                      |                      | ✓     | \$63.87†                    |
| Haines        | 415        | 2014                     | ✓              |                      |                      |       | \$32.00                     |
| St. Paul      | 416        | 2014                     | ✓              |                      |                      |       | \$61.20                     |
| Mosier        | 433        | 2006                     |                | ✓                    |                      |       | \$40.71                     |
| Rivergrove    | 445        |                          |                |                      |                      |       |                             |
| Huntington    | 445        | 2014                     | ✓              |                      |                      |       | \$32.00                     |
| Fossil        | 475        |                          |                |                      |                      |       |                             |
| Gates         | 485        | 2014                     |                |                      |                      | ✓     | \$52.10                     |
| Mount Vernon  | 525        |                          |                | ✓                    |                      |       | \$38.00                     |
| Cove          | 550        | 2010                     |                | ✓                    |                      |       | \$32.90                     |
| Manzanita     | 615        | 2014                     | ✓              |                      |                      |       | \$42.00                     |
| Arlington     | 619        | 2005                     | ✓              |                      |                      |       | \$32.00                     |
| Weston        | 675        | 2013                     | ✓              |                      |                      |       | \$45.92                     |
| Condon        | 685        | 2012                     |                |                      |                      | ✓     | \$27.30                     |
| Powers        | 695        | 2014                     |                |                      |                      | ✓     | \$52.20                     |
| Echo          | 705        | 2012                     |                |                      |                      | ✓     | \$30.30                     |
| Yachats       | 800        | 2006                     |                | ✓                    |                      |       | \$50.00                     |
| Malin         | 815        | > 10 yrs. ago            |                |                      |                      | ✓     | \$28.00                     |
| Merrill       | 845        | 2010                     | ✓              |                      |                      |       | \$38.50                     |
| Adair Village | 850        | 2012                     | ✓              |                      |                      |       | \$69.75                     |
| Glendale      | 874        | 2013                     | ✓              |                      |                      |       | \$37.00                     |
| Prairie City  | 910        |                          |                |                      |                      |       |                             |
| Halsey        | 917        | 2014                     |                | ✓                    |                      |       | \$37.50                     |
| Falls City    | 950        | 2014                     |                | ✓                    |                      |       | \$41.96                     |

| City                            | Population | Last Year of Rate Change | Rate structure |                      |                      |       | Average Cost per 5,000 gal. |
|---------------------------------|------------|--------------------------|----------------|----------------------|----------------------|-------|-----------------------------|
|                                 |            |                          | Flat Rate      | Inclining Block Rate | Declining Block Rate | Other |                             |
| Oakland                         | 980        | 2014                     | ✓              |                      |                      |       | \$10.89                     |
| Donald                          | 980        | 2014                     |                |                      |                      | ✓     | \$45.00                     |
| <b>City Sizes 1,000 - 4,999</b> |            |                          |                |                      |                      |       |                             |
| Island City                     | 1,015      | 2014                     | ✓              |                      |                      |       | \$40.00                     |
| Yamhill                         | 1,020      | > 10 yrs. ago            |                |                      |                      | ✓     | \$37.56                     |
| Yoncalla                        | 1,060      | 2014                     |                | ✓                    |                      |       | \$37.00                     |
| Joseph                          | 1,090      | 2014                     |                |                      |                      | ✓     | \$27.87                     |
| Athena                          | 1,125      | > 10 yrs. ago            |                |                      |                      | ✓     | \$29.00                     |
| Port Orford                     | 1,135      | 2014                     |                | ✓                    |                      |       | \$53.96                     |
| Riddle                          | 1,185      | 2008                     | ✓              |                      |                      |       | \$40.00                     |
| Cascade Locks                   | 1,200      | 2013                     | ✓              |                      |                      |       | \$28.72                     |
| Gold Hill                       | 1,220      | 2014                     |                | ✓                    |                      |       |                             |
| Siletz                          | 1,290      | 2014                     |                |                      |                      | ✓     | \$59.00                     |
| Heppner                         | 1,290      | 2013                     |                | ✓                    |                      |       | \$37.40                     |
| Dunes City                      | 1,310      |                          |                |                      |                      |       |                             |
| Bay City                        | 1,310      | 2014                     |                | ✓                    |                      |       | \$26.93                     |
| Rockaway Beach                  | 1,325      | 2011                     | ✓              |                      |                      |       | \$31.70‡                    |
| Culver                          | 1,370      |                          |                |                      |                      |       |                             |
| Depoe Bay                       | 1,405      | 2014                     |                |                      |                      | ✓     | \$36.00‡                    |
| Gearhart                        | 1,465      | 2014                     | ✓              |                      |                      |       | \$20.00                     |
| Hines                           | 1,565      | 2008                     | ✓              |                      |                      |       | \$36.00‡                    |
| La Pine                         | 1,670      | > 10 yrs. ago            |                | ✓                    |                      |       | \$30.14                     |
| Brownsville                     | 1,670      |                          |                |                      |                      |       |                             |
| Lakeside                        | 1,705      |                          |                |                      |                      |       |                             |
| Clatskanie                      | 1,729      | 2011                     |                |                      |                      | ✓     | \$33.02                     |
| John Day                        | 1,745      | 2014                     |                | ✓                    |                      |       | \$34.00                     |
| Banks                           | 1,785      | 2014                     | ✓              |                      |                      |       | \$37.00                     |
| Irrigon                         | 1,835      | 2014                     |                | ✓                    |                      |       | \$40.05                     |
| Columbia City                   | 1,945      | 2014                     |                | ✓                    |                      |       | \$48.73                     |
| Vale                            | 1,976      | 2014                     |                |                      | ✓                    |       | \$30.68                     |
| Waldport                        | 2,080      |                          |                |                      |                      |       |                             |
| Rogue River                     | 2,145      |                          |                |                      |                      |       |                             |

| City                            | Population | Last Year of Rate Change | Rate structure |                      |                      |       | Average Cost per 5,000 gal. |
|---------------------------------|------------|--------------------------|----------------|----------------------|----------------------|-------|-----------------------------|
|                                 |            |                          | Flat Rate      | Inclining Block Rate | Declining Block Rate | Other |                             |
| Union                           | 2,240      | 2014                     | ✓              |                      |                      |       | \$27.69                     |
| Vernonia                        | 2,450      | 2013                     | ✓              |                      |                      |       | \$48.75                     |
| Lakeview                        | 2,490      | 2011                     | ✓              |                      |                      |       | \$15.00                     |
| Gervais                         | 2,520      | 2014                     |                |                      |                      | ✓     | \$26.38                     |
| Myrtle Point                    | 2,525      | 2013                     |                | ✓                    |                      |       | \$32.43                     |
| Jacksonville                    | 2,840      | 2014                     |                |                      |                      | ✓     | \$30.79                     |
| Estacada                        | 2,880      | 2014                     |                |                      |                      | ✓     | \$35.84                     |
| Bandon                          | 3,100      | 2007                     |                |                      |                      | ✓     | \$17.40                     |
| Nyssa                           | 3,200      | 2013                     |                |                      |                      | ✓     | \$29.25                     |
| Mt. Angel                       | 3,300      | 2009                     | ✓              |                      |                      |       | \$23.51                     |
| Boardman                        | 3,405      |                          |                |                      |                      |       |                             |
| Toledo                          | 3,465      | 2014                     |                |                      |                      | ✓     | \$60.75                     |
| Aumsville                       | 3,750      | 2013                     |                |                      |                      | ✓     | \$31.82                     |
| Coquille                        | 3,865      | 2007                     |                |                      |                      | ✓     | \$28.80                     |
| Wood Village                    | 3,875      | 2014                     |                |                      |                      | ✓     | \$28.02                     |
| Phoenix                         | 4,585      | 2014                     |                |                      |                      | ✓     | \$34.51                     |
| Philomath                       | 4,625      | 2014                     |                | ✓                    |                      |       | \$30.05                     |
| Veneta                          | 4,635      | 2014                     |                |                      |                      | ✓     | \$31.65                     |
| <b>City Sizes 5,000 – 9,999</b> |            |                          |                |                      |                      |       |                             |
| Creswell                        | 5,031      | 2006                     |                |                      |                      | ✓     | \$44.29                     |
| Warrenton                       | 5,050      | 2014                     |                |                      |                      | ✓     | \$30.26                     |
| Sheridan                        | 6,170      | 2007                     |                | ✓                    |                      |       | \$20.10                     |
| Talent                          | 6,170      | 2014                     | ✓              |                      |                      |       | \$41.97                     |
| Madras                          | 6,255      | 2014                     | ✓              |                      |                      |       | \$27.74                     |
| Sutherlin                       | 7,930      | 2014                     |                |                      |                      | ✓     | \$38.46                     |
| Molalla                         | 8,200      | > 10 yrs. ago            |                |                      |                      | ✓     | \$27.44                     |
| Florence                        | 8,466      | 2014                     |                | ✓                    |                      |       | \$29.90                     |
| Eagle Point                     | 8,575      | 2014                     |                |                      |                      | ✓     | \$24.88                     |
| Independence                    | 8,585      | 2014                     |                |                      |                      | ✓     | \$51.38                     |
| Sweet Home                      | 9,065      | 2014                     | ✓              |                      |                      |       | \$32.86                     |
| Silverton                       | 9,330      | 2014                     |                |                      |                      | ✓     | \$29.16                     |

| City                              | Population | Last Year of Rate Change | Rate structure |                      |                      |       | Average Cost per 5,000 gal. |
|-----------------------------------|------------|--------------------------|----------------|----------------------|----------------------|-------|-----------------------------|
|                                   |            |                          | Flat Rate      | Inclining Block Rate | Declining Block Rate | Other |                             |
| Astoria                           | 9,500      | 2013                     | ✓              |                      |                      |       | \$33.98‡                    |
| Cottage Grove                     | 9,785      | 2014                     |                | ✓                    |                      |       | \$46.50                     |
| Sandy                             | 9,980      | 2013                     | ✓              |                      |                      |       | \$22.10                     |
| <b>City Sizes 10,000 – 24,999</b> |            |                          |                |                      |                      |       |                             |
| Gladstone                         | 11,495     | 2014                     | ✓              |                      |                      |       | \$16.80                     |
| Cornelius                         | 12,161     | 2014                     |                |                      |                      | ✓     | \$42.02                     |
| St. Helens                        | 12,895     | 2013                     |                |                      |                      | ✓     | \$43.00‡                    |
| The Dalles                        | 14,400     | 2014                     |                |                      |                      | ✓     | \$57.94                     |
| Dallas                            | 14,800     | 2014                     |                |                      |                      | ✓     | \$23.58                     |
| Lebanon                           | 15,660     | 2014                     |                | ✓                    |                      |       | \$51.10                     |
| Troutdale                         | 16,015     | 2014                     | ✓              |                      |                      |       | \$14.85                     |
| Coos Bay                          | 16,160     |                          |                |                      |                      |       |                             |
| Pendleton                         | 16,600     | 2014                     |                | ✓                    |                      |       | \$32.55                     |
| Sherwood                          | 18,771     | 2012                     |                | ✓                    |                      |       | \$44.24                     |
| Ashland                           | 20,295     | 2014                     |                | ✓                    |                      |       | \$38.01                     |
| Milwaukie                         | 20,500     | 2014                     |                |                      |                      | ✓     | \$27.46                     |
| Klamath Falls                     | 21,200     | 2014                     |                |                      |                      | ✓     | \$14.26                     |
| Wilsonville                       | 21,550     | 2014                     |                | ✓                    |                      |       | \$32.01                     |
| Forest Grove                      | 22,000     | 2013                     |                | ✓                    |                      |       | \$23.00                     |
| Roseburg                          | 22,275     | 2012                     |                |                      |                      | ✓     | \$24.51                     |
| Newberg                           | 22,396     | 2014                     | ✓              |                      |                      |       | \$21.54                     |
| <b>City Sizes 25,000 – 49,999</b> |            |                          |                |                      |                      |       |                             |
| West Linn                         | 25,425     | 2014                     |                | ✓                    |                      |       | \$18.55                     |
| Redmond                           | 26,590     | 2014                     |                |                      |                      | ✓     | \$26.14                     |
| Oregon City                       | 33,390     | 2014                     | ✓              |                      |                      |       | \$30.27                     |
| Grants Pass                       | 35,000     | 2014                     |                |                      |                      | ✓     | \$22.98                     |
| Lake Oswego                       | 36,990     | 2014                     |                | ✓                    |                      |       | \$40.66                     |
| Tigard                            | 49,135     | 2014                     |                |                      |                      | ✓     | \$57.32                     |
| <b>City Sizes 50,000 or more</b>  |            |                          |                |                      |                      |       |                             |
| Albany                            | 50,720     | 2014                     |                |                      | ✓                    |       | \$43.09                     |
| Springfield                       | 59,990     |                          |                |                      |                      |       |                             |

| City      | Population | Last Year of Rate Change | Rate structure |                      |                      |       | Average Cost per 5,000 gal. |
|-----------|------------|--------------------------|----------------|----------------------|----------------------|-------|-----------------------------|
|           |            |                          | Flat Rate      | Inclining Block Rate | Declining Block Rate | Other |                             |
| Medford   | 76,300     | 2012                     |                |                      |                      | ✓     | \$10.57                     |
| Bend      | 81,000     | 2014                     |                |                      |                      | ✓     | \$27.40                     |
| Hillsboro | 81,310     | 2014                     |                | ✓                    |                      |       | \$22.16                     |
| Beaverton | 93,000     | 2014                     | ✓              |                      |                      |       | \$31.18                     |
| Salem     | 157,888    | 2014                     | ✓              |                      |                      |       | \$22.84                     |
| Portland  | 592,120    |                          |                |                      |                      |       |                             |

‡Bi-monthly billing city where values adjusted for comparable comparison. See Data Editing and Analysis in Appendix A for explanation.

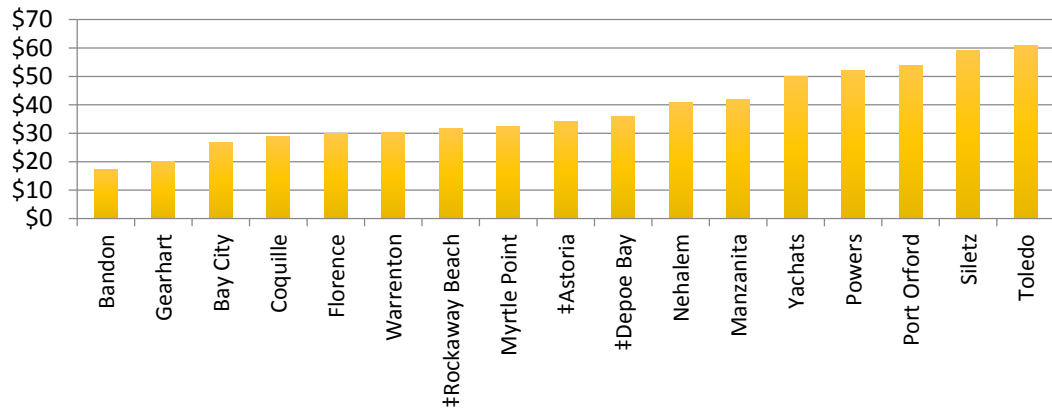
#### **Charts C.2A-C.2F: Water Bill a Residential Customer Would Pay for 5,000 Gallons Using a ¾" Meter**

As mentioned in the report, please keep in mind that the values reported below are just values. Assumptions cannot be made that a utility is in the black or red. In other words, a lower value does not necessarily suggest a utility is meeting its maintenance and operating costs and generating enough revenue to fund capital investments. Similarly, a higher value does not necessarily suggest a city is generating more revenue than it needs.

Although the survey asked cities to report the minimum value a customer would pay if the city could not bill for exactly 5,000 gallons, the bi-monthly billing cities have values adjusted to reflect a monthly rate for a more representative comparison. See Appendix A Data Editing and Analysis for more information on the adjustments. See footnotes to determine which cities were adjusted.

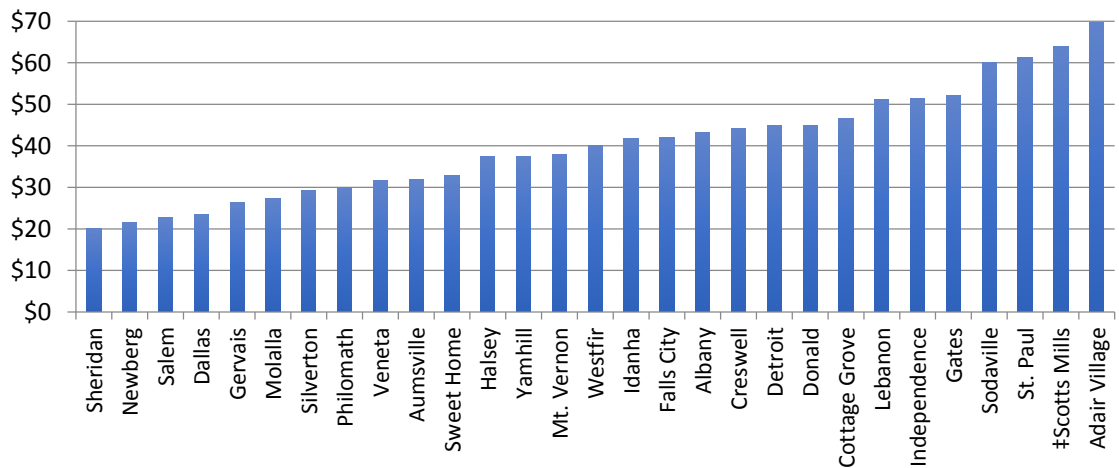
‡Indicates a city with bi-monthly billing and an adjusted bi-monthly reported value.

**Chart C.2A: Coastal Region Cities' Water Bill for 5,000 gallons**



Bandon is a city with a significantly lower rate in the Coastal region. Its last effective rate change occurred in 2007, and its city charter only allows voters to approve rate increases. The city is considering infrastructure improvements should rates increase in the future.

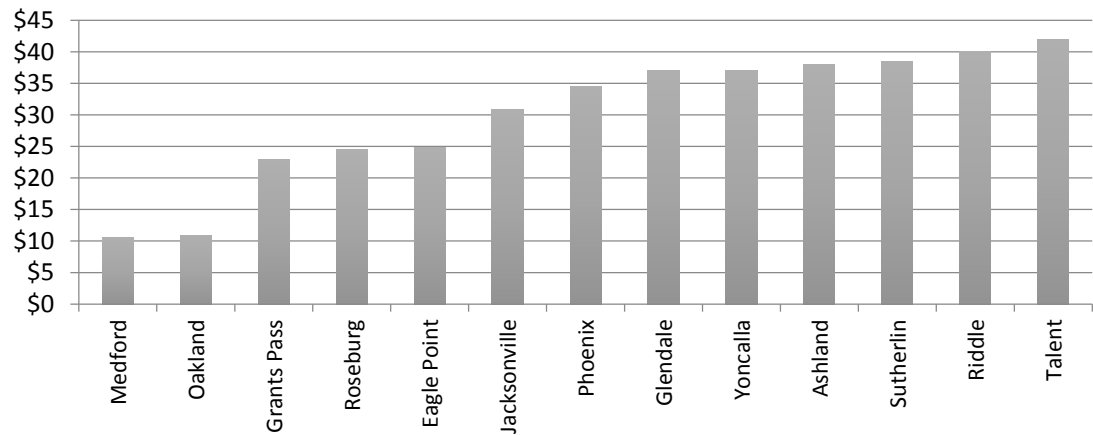
**Chart C.2B: Valley Region Cities' Water Bill for 5,000 gallons**



Adair Village raised rates in 2013 to invest in capital improvements to address a 60percent water loss rate. Covering operation and maintenance costs and ensuring the ability to pay bonds are also other components of the rate increase.

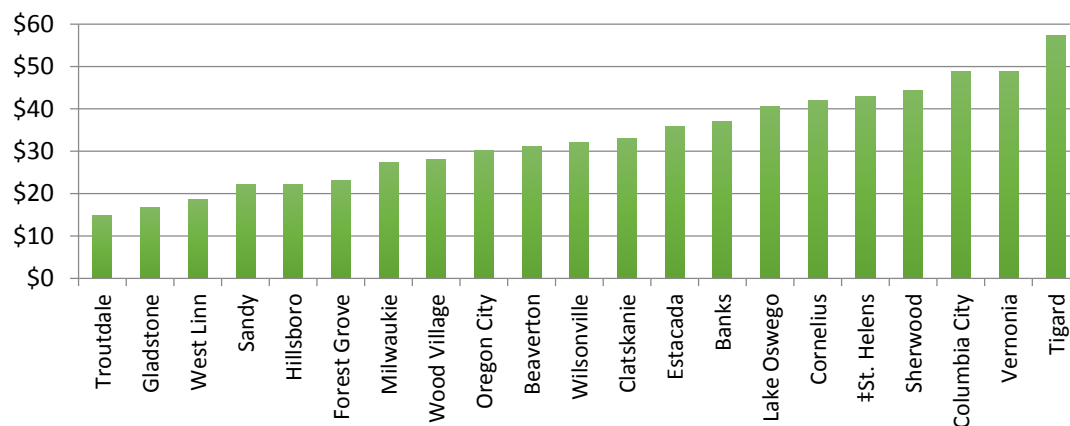


**Chart C.2C: Southern Region Cities' Water Bill for 5,000 gallons**

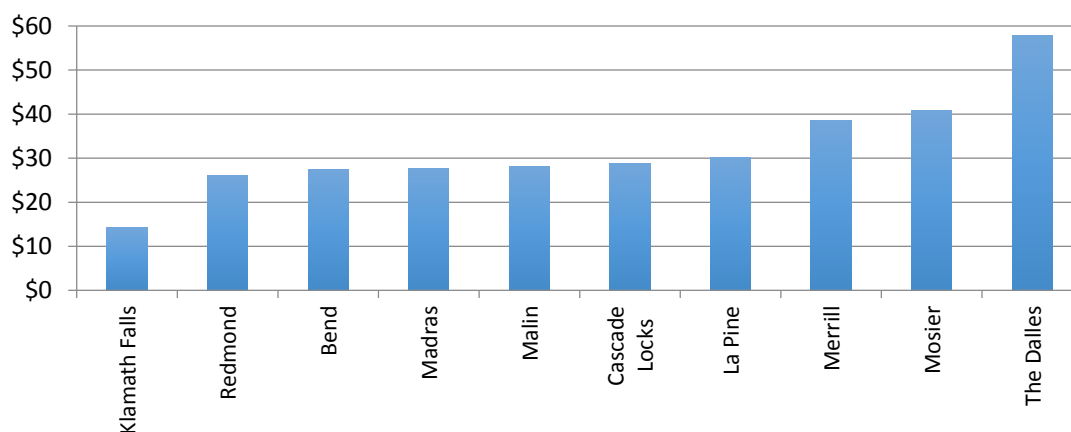


The Medford Water Commission (MWC) provides the City of Medford's drinking water and is an autonomous agency of the City. Phoenix, and Talent receives its water from the MWC as well, and Ashland uses MWC as a supplemental source. Talent maintains its own distribution and storage system.

**Chart C.2D: Portland/Mt. Hood Region Cities' Water Bill for 5,000 gallons**

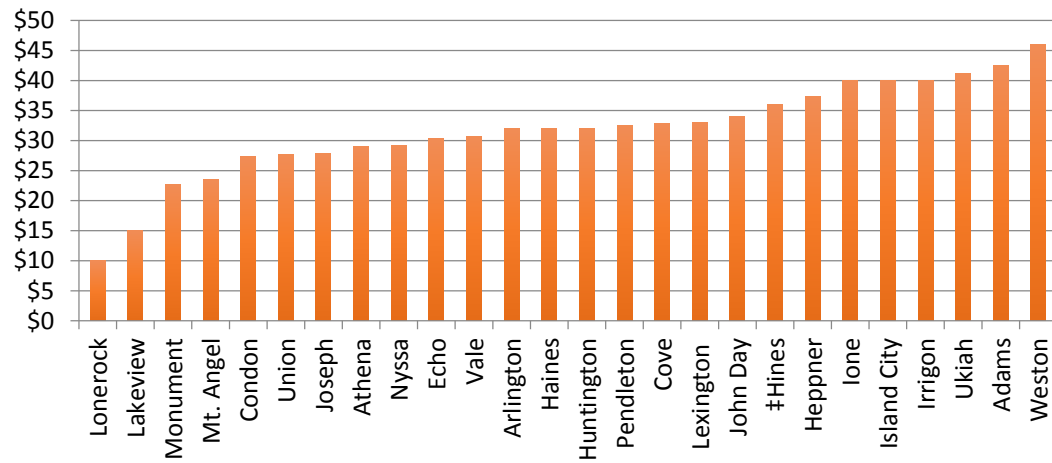


**Chart C.2E: Central Region Cities' Water Bill for 5,000 gallons**



While the Dalles have a higher bill compared to other cities in the Central region historically, they have not raised rates. Only recently in 2014 they increased rates to addressing rising infrastructure needs.

**Chart C.2F: Eastern Region Cities' Water Bill for 5,000 gallons**



Lonerock has not experienced a rate increase since 1998.

**Table C.3: Drinking Water Production Characteristics**

| City                  | Avg. Daily Production in 2013 (MG) | Amount of Avg. Daily Production Sold (not including city use) | Peak Flow of Water Treated in a 24-hr. Period in 2013 (MG) | Year Avg. Daily Production Exceeds Design Capacity | Water Conservation & Management Plan | Approval Date |
|-----------------------|------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|--------------------------------------|---------------|
| <b>&lt;1,000</b>      | 7.7                                | 84                                                            | 0.4                                                        | 2032                                               | 12                                   | 2007          |
| <b>1,000-4,999</b>    | 0.4                                | 78                                                            | 13                                                         | 2034                                               | 25                                   | 2009          |
| <b>5,000-9,999</b>    | 1.4                                | 88                                                            | 2.2                                                        | 2028                                               | 5                                    | 2010          |
| <b>10,000-24,999</b>  | 3.3                                | 88                                                            | 7                                                          | 2046                                               | 9                                    | 2011          |
| <b>25,000-49,999</b>  | 4.6                                | 90                                                            | 11                                                         | 2017                                               | 6                                    | 2012          |
| <b>50,000 or more</b> | 15.5                               | 96                                                            | 31                                                         | 2033                                               | 6                                    | 2010          |
| <b>All cities</b>     | 4.0                                | 83                                                            | 10                                                         | 2033                                               | 63                                   | 2009          |

| City                        | Population | Avg. Daily Production in 2013 (MG) | Amount of Avg. Daily Production Sold (not including city use) | Peak Flow of Water Treated in a 24-hr. Period in 2013 (MG) | Year Avg. Daily Production Exceeds Design Capacity | Water Conservation & Management Plan | Approval Date |
|-----------------------------|------------|------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|--------------------------------------|---------------|
| <b>City Sizes &lt;1,000</b> |            |                                    |                                                               |                                                            |                                                    |                                      |               |
| Lonerock                    | 34         |                                    |                                                               |                                                            |                                                    | Yes                                  |               |
| Monument                    | 130        |                                    |                                                               |                                                            |                                                    | No                                   |               |
| Idanha                      | 135        |                                    |                                                               |                                                            |                                                    | No                                   |               |
| Detroit                     | 205        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Sumpter                     | 205        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Waterloo                    | 230        | N/A                                | N/A                                                           |                                                            | N/A                                                | No                                   |               |
| Ukiah                       | 235        | Unknown                            | None                                                          | Don't use additives                                        | Unknown                                            | Yes                                  | 2005          |

| City         | Population | Avg. Daily Production in 2013 (MG) | Amount of Avg. Daily Production Sold (not including city use) | Peak Flow of Water Treated in a 24-hr. Period in 2013 (MG) | Year Avg. Daily Production Exceeds Design Capacity | Water Conservation & Management Plan | Approval Date |
|--------------|------------|------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|--------------------------------------|---------------|
| Lexington    | 255        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Westfir      | 255        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Nehalem      | 280        | 0.11                               | 98                                                            | 0.20                                                       | 2045                                               | Yes                                  | 2005          |
| Sodaville    | 310        | 0.02                               | 100                                                           | No Treatment                                               | Unknown                                            | Yes                                  | 2004          |
| Moro         | 325        |                                    |                                                               |                                                            |                                                    | No                                   |               |
| Ione         | 330        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Adams        | 350        | 0.06                               | 94                                                            |                                                            | Beyond 2025                                        | Yes                                  | 2005          |
| Scotts Mills | 364        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Haines       | 415        | 0.12                               | 100                                                           | 0.12                                                       | Unknown                                            | No                                   |               |
| St. Paul     | 416        | 0.06                               | 100                                                           | 0.50                                                       | 2014                                               | No                                   |               |
| Mosier       | 433        | 0.07                               | 95                                                            | 0.17                                                       | Unknown                                            | No                                   |               |
| Rivergrove   | 445        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Huntington   | 445        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Fossil       | 475        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Gates        | 485        | 0.06                               |                                                               | 0.13                                                       | 20 + years                                         | Yes                                  | 2014          |
| Mount Vernon | 525        |                                    |                                                               |                                                            |                                                    | No                                   |               |
| Cove         | 550        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Manzanita    | 615        | 0.31                               | 84                                                            | 0.65                                                       | 2030                                               | Yes                                  | 2010          |
| Arlington    | 619        | 120.6*                             | 0*                                                            |                                                            |                                                    | No                                   |               |
| Weston       | 675        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Condon       | 685        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Powers       | 695        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Echo         | 705        | 0.21                               | 88                                                            | 0.55                                                       | Unknown                                            | Yes                                  | 2012          |

| City                            | Population | Avg. Daily Production in 2013 (MG) | Amount of Avg. Daily Production Sold (not including city use) | Peak Flow of Water Treated in a 24-hr. Period in 2013 (MG) | Year Avg. Daily Production Exceeds Design Capacity | Water Conservation & Management Plan | Approval Date |
|---------------------------------|------------|------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|--------------------------------------|---------------|
| Yachats                         | 800        | 0.13                               | 75                                                            | 0.50                                                       | 2043                                               | Yes                                  | 2006          |
| Malin                           | 815        | 0.06                               | 95                                                            | 0.16                                                       | unknown                                            | No                                   |               |
| Merrill                         | 845        | 0.15                               |                                                               | Do not treat                                               |                                                    | No                                   |               |
| Adair Village                   | 850        | 0.25                               | 60                                                            | 0.75                                                       | Unknown                                            | No                                   |               |
| Glendale                        | 874        | 0.12                               | 97                                                            | 0.36                                                       | Unknown                                            | Yes                                  | 2003          |
| Prairie City                    | 910        |                                    |                                                               |                                                            |                                                    |                                      |               |
| Halsey                          | 917        | 0.09                               |                                                               | 0.20                                                       | 2028                                               | Yes                                  |               |
| Falls City                      | 950        |                                    |                                                               |                                                            |                                                    | No                                   |               |
| Oakland                         | 980        |                                    |                                                               |                                                            | Never                                              | Yes                                  |               |
| Donald                          | 980        |                                    |                                                               |                                                            |                                                    |                                      |               |
| <b>City Sizes 1,000 - 4,999</b> |            |                                    |                                                               |                                                            |                                                    |                                      |               |
| Island City                     | 1,015      | 0.53                               | 90                                                            |                                                            | 2030                                               | Yes                                  | 2011          |
| Yamhill                         | 1,020      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Yoncalla                        | 1,060      | 0.35                               | 97                                                            | 250                                                        | 2050                                               | No                                   |               |
| Joseph                          | 1,090      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Athena                          | 1,125      | 0.2                                | 95                                                            | N/A                                                        | 1993                                               | Yes                                  |               |
| Port Orford                     | 1,135      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Riddle                          | 1,185      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Cascade Locks                   | 1,200      | 0.26                               | 50                                                            | 0.50                                                       |                                                    | No                                   |               |
| Gold Hill                       | 1,220      |                                    |                                                               |                                                            |                                                    | No                                   |               |
| Siletz                          | 1,290      | <0.05                              | 90                                                            | 0.23                                                       |                                                    | Yes                                  |               |
| Heppner                         | 1,290      | 0.38                               | 76                                                            | Do not treat                                               | Undetermined                                       | Yes                                  | 2011          |
| Dunes City                      | 1,310      | N/A                                | N/A                                                           | N/A                                                        | N/A                                                | No                                   |               |

| City           | Population | Avg. Daily Production in 2013 (MG) | Amount of Avg. Daily Production Sold (not including city use) | Peak Flow of Water Treated in a 24-hr. Period in 2013 (MG) | Year Avg. Daily Production Exceeds Design Capacity | Water Conservation & Management Plan | Approval Date |
|----------------|------------|------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|--------------------------------------|---------------|
| Bay City       | 1,310      | 0.6                                |                                                               | 1.3                                                        |                                                    | Yes                                  |               |
| Rockaway Beach | 1,325      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Culver         | 1,370      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Depoe Bay      | 1,405      | 0.21                               | 77                                                            | 0.55                                                       |                                                    | Yes                                  |               |
| Gearhart       | 1,465      |                                    |                                                               |                                                            | 2032                                               | Yes                                  |               |
| Hines          | 1,565      | 0.59                               | 0*                                                            | N/A                                                        | Not foreseen                                       | Yes                                  | 2004          |
| La Pine        | 1,670      | 0.24                               | 91                                                            |                                                            | 2025                                               | Yes                                  | 2013          |
| Brownsville    | 1,670      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Lakeside       | 1,705      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Clatskanie     | 1,729      | 0.23                               | 100                                                           | 0.48                                                       | Unknown                                            | Yes                                  | 2008          |
| John Day       | 1,745      |                                    | 85-90                                                         | 0.60                                                       | Unlikely                                           | No                                   |               |
| Banks          | 1,785      | 0.25                               |                                                               | 0.25                                                       | 2020                                               | Yes                                  | 2010          |
| Irrigon        | 1,835      | 0.45                               | 85                                                            | 0.38                                                       | 2025                                               | Yes                                  | 2010          |
| Columbia City  | 1,945      | 0.14                               | 78                                                            | N/A                                                        | 2033 or later                                      | Yes                                  | 2013          |
| Vale           | 1,976      | 0.21                               | 94                                                            | 0.38                                                       |                                                    | No                                   |               |
| Waldport       | 2,080      | 0.24                               | 23*                                                           |                                                            |                                                    |                                      |               |
| Rogue River    | 2,145      | 0.37                               | 81                                                            | 0.64                                                       | 2039                                               | Yes                                  | 2014          |
| Union          | 2,240      | 1.0                                | 0*                                                            | 1.5                                                        |                                                    | Yes                                  |               |
| Vernonia       | 2,450      |                                    |                                                               |                                                            |                                                    | Yes                                  |               |
| Lakeview       | 2,490      |                                    | 98                                                            | 2.7                                                        | Unknown                                            | No                                   |               |
| Gervais        | 2,520      |                                    |                                                               | 1.0                                                        |                                                    | No                                   |               |
| Myrtle Point   | 2,525      | 0.35                               | 73                                                            | 1.7                                                        | Not foreseen                                       | Yes                                  | 2001          |
| Jacksonville   | 2,840      | 0.84                               | 90                                                            | Do not treat                                               |                                                    | Yes                                  | 2014          |

| City                            | Population | Avg. Daily Production in 2013 (MG) | Amount of Avg. Daily Production Sold (not including city use) | Peak Flow of Water Treated in a 24-hr. Period in 2013 (MG) | Year Avg. Daily Production Exceeds Design Capacity | Water Conservation & Management Plan | Approval Date |
|---------------------------------|------------|------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|--------------------------------------|---------------|
| Estacada                        | 2,880      | 0.5                                | 100                                                           | 0.8                                                        | Unknown                                            | Yes                                  | 2002          |
| Bandon                          | 3,100      | 0.54                               | 67                                                            |                                                            | 2029                                               | Yes                                  | 2003          |
| Nyssa                           | 3,200      |                                    |                                                               | 1.1                                                        |                                                    | Yes                                  |               |
| Mt. Angel                       | 3,300      | 0.31                               | 100                                                           | N/A                                                        | Unknown                                            | Yes                                  | 2010          |
| Boardman                        | 3,405      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Toledo                          | 3,465      | 0.9                                | 75                                                            | 1.5                                                        | 2090                                               | No                                   |               |
| Aumsville                       | 3,750      |                                    | 99                                                            |                                                            |                                                    |                                      |               |
| Coquille                        | 3,865      | 0.52                               | 98                                                            |                                                            | never                                              | No                                   |               |
| Wood Village                    | 3,875      | 0.4                                | 91                                                            | 0.89                                                       | 2044                                               | Yes                                  | 2013          |
| Phoenix                         | 4,585      |                                    |                                                               |                                                            |                                                    | Yes                                  |               |
| Philomath                       | 4,625      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Veneta                          | 4,635      | 0.55                               | 82                                                            | 1.2                                                        | ~2055                                              | Yes                                  | 2012          |
| <b>City Sizes 5,000 - 9,999</b> |            |                                    |                                                               |                                                            |                                                    |                                      |               |
| Creswell                        | 5,031      | 0.63                               | 76                                                            |                                                            | 2020                                               | Yes                                  |               |
| Warrenton                       | 5,050      | 1.3                                | 25percent (Jun-Sep)<br>60percent (Oct-May)                    | 2.3                                                        | 2026                                               | No                                   |               |
| Sheridan                        | 6,170      | 2.5                                |                                                               |                                                            | 2020                                               | No                                   |               |
| Talent                          | 6,170      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Madras                          | 6,255      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Sutherlin                       | 7,930      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Molalla                         | 8,200      | 1.0                                |                                                               | 2.0                                                        | Unknown                                            | No                                   |               |
| Florence                        | 8,466      | 0.93                               | 95                                                            | 1.7                                                        | Not foreseen                                       | Yes                                  | 2010          |
| Eagle Point                     | 8,575      |                                    |                                                               |                                                            | 2017                                               | Yes                                  |               |



| City                              | Population | Avg. Daily Production in 2013 (MG) | Amount of Avg. Daily Production Sold (not including city use) | Peak Flow of Water Treated in a 24-hr. Period in 2013 (MG) | Year Avg. Daily Production Exceeds Design Capacity | Water Conservation & Management Plan | Approval Date |
|-----------------------------------|------------|------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|--------------------------------------|---------------|
| Independence                      | 8,585      |                                    |                                                               |                                                            |                                                    |                                      |               |
| Sweet Home                        | 9,065      | 2                                  | 88                                                            | 2.0                                                        | 2050                                               | Yes                                  | 2009          |
| Silverton                         | 9,330      | 1.3                                | 92                                                            | 2.5                                                        | 2035                                               | No                                   |               |
| Astoria                           | 9,500      | 1.9                                |                                                               | 2.7                                                        |                                                    |                                      |               |
| Cottage Grove                     | 9,785      | 1.2                                | 85-90                                                         | 2.6                                                        | 2019                                               | No                                   |               |
| Sandy                             | 9,980      | 0.81                               | 89                                                            | 2.1                                                        | 2040                                               | Yes                                  | 2010          |
| <b>City Sizes 10,000 - 24,999</b> |            |                                    |                                                               |                                                            |                                                    |                                      |               |
| Gladstone                         | 11,495     |                                    |                                                               |                                                            |                                                    |                                      |               |
| Cornelius                         | 12,161     | N/A                                | N/A                                                           |                                                            | N/A                                                | Yes                                  |               |
| St. Helens                        | 12,895     | 1.5                                | 99.5                                                          | 2.5                                                        | Beyond 2030                                        | Yes                                  | 2013          |
| The Dalles                        | 14,400     | 3.2                                | 86                                                            | 8.5                                                        | Unforeseen                                         | No                                   |               |
| Dallas                            | 14,800     | 2.3                                | 90                                                            | 4.9                                                        | 2040                                               | No                                   |               |
| Lebanon                           | 15,660     | 1.9                                |                                                               | 4.0                                                        | >20 years                                          | No                                   |               |
| Troutdale                         | 16,015     |                                    |                                                               |                                                            |                                                    |                                      |               |
| Coos Bay                          | 16,160     |                                    |                                                               |                                                            |                                                    |                                      |               |
| Pendleton                         | 16,600     | 5.3                                | 100                                                           | 10.1                                                       | WFP: Unforeseen.<br>Wells: ~2024                   | Yes                                  | 2003          |
| Sherwood                          | 18,771     | 1.9                                |                                                               | 3.7                                                        | 2063                                               | Yes                                  | 2009          |
| Ashland                           | 20,295     | 2.9                                | 95                                                            | 6.0                                                        | 2053                                               | Yes                                  | 2014          |
| Milwaukie                         | 20,500     | 2.5                                | 85                                                            | 4.4                                                        | Unforeseen                                         | No                                   |               |
| Klamath Falls                     | 21,200     | 6.7                                | 100                                                           | 15.1                                                       | 2070                                               | Yes                                  | 2012          |
| Wilsonville                       | 21,550     | 4.8                                | 36                                                            | 6.6                                                        | 2023                                               | Yes                                  | 2012          |
| Forest Grove                      | 22,000     |                                    |                                                               |                                                            |                                                    | Yes                                  |               |

| City                              | Population | Avg. Daily Production in 2013 (MG) | Amount of Avg. Daily Production Sold (not including city use) | Peak Flow of Water Treated in a 24-hr. Period in 2013 (MG) | Year Avg. Daily Production Exceeds Design Capacity | Water Conservation & Management Plan | Approval Date |
|-----------------------------------|------------|------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------|--------------------------------------|---------------|
| Roseburg                          | 22,275     | 4.6                                | 100                                                           | 8.4                                                        |                                                    | No                                   |               |
| Newberg                           | 22,396     | 2.5                                | 92                                                            | 4.5                                                        | 2025                                               | Yes                                  | 2014          |
| <b>City Sizes 25,000 - 49,999</b> |            |                                    |                                                               |                                                            |                                                    |                                      |               |
| West Linn                         | 25,425     | 2.6                                | 100                                                           | 6.8                                                        | 2014                                               | Yes                                  | 2010          |
| Redmond                           | 26,590     | 5.6                                | 85                                                            | 13.2                                                       | 2020                                               | Yes                                  | 2013          |
| Oregon City                       | 33,390     |                                    |                                                               |                                                            |                                                    | Yes                                  |               |
| Grants Pass                       | 35,000     | 5.5                                | 96.9                                                          | 13.0                                                       | ~2025-2030                                         | Yes                                  | 2014          |
| Lake Oswego                       | 36,990     | 4.9                                | 80                                                            | 11.3                                                       |                                                    | Yes                                  |               |
| Tigard                            | 49,135     |                                    |                                                               | 10.3                                                       |                                                    | Yes                                  |               |

| City Sizes 50,000 or more |         |      |      |      |            |     |      |
|---------------------------|---------|------|------|------|------------|-----|------|
| Albany                    | 50,720  | 7.3  | 94.5 | 23.8 | 2051       | Yes | 2007 |
| Springfield               | 59,990  |      |      |      |            |     |      |
| Medford                   | 76,300  | 27   | ~92  | 56   | 2030       | Yes | 2009 |
| Bend                      | 81,000  | 11.8 | N/A  | 25   | Updating   | Yes | 2011 |
| Hillsboro                 | 81,310  | 14.7 | 94   | 28   | 2019       | Yes | 2010 |
| Beaverton                 | 93,000  | 6.9  | 94   | 12.1 | Unforeseen | Yes |      |
| Salem                     | 157,888 | 25.4 | 100  | 43.7 | Unforeseen | Yes | 2014 |
| Portland                  | 592,120 |      |      |      |            |     |      |

\*Values flagged for review, but city unable to confirm value.

**Table C.4: Water Loss Measurements & Meter Characteristics**

| City Size      | Water Loss |                                                   |          |                                                  |       | Meters Used             |                         |                          |
|----------------|------------|---------------------------------------------------|----------|--------------------------------------------------|-------|-------------------------|-------------------------|--------------------------|
|                | Measured   | Method to Determine Amount Lost                   |          |                                                  |       | # of Cities Using Radio | # of Cities Using Touch | # of Cities Using Manual |
|                |            | Comparison of Production & Customer Meter Volumes | Estimate | Recently Adopted IWA/AWWA Water Loss Methodology | Other |                         |                         |                          |
| <1,000         | 16         | 13                                                | 0        | 0                                                | 1     | 1                       | 9                       | 15                       |
| 1,000-4,999    | 29         | 22                                                | 5        | 0                                                | 0     | 12                      | 9                       | 28                       |
| 5,000-9,999    | 9          | 8                                                 | 0        | 0                                                | 1     | 8                       | 4                       | 8                        |
| 10,000-24,999  | 14         | 12                                                | 1        | 0                                                | 1     | 8                       | 5                       | 10                       |
| 25,000-49,999  | 6          | 6                                                 | 0        | 0                                                | 0     | 2                       | 1                       | 5                        |
| 50,000 or more | 6          | 2                                                 | 0        | 3                                                | 1     | 4                       | 5                       | 4                        |
| All cities     | 80         | 63                                                | 6        | 3                                                | 4     | 35                      | 33                      | 70                       |

| City             | Population | Water Loss |                                                   |          |                                                  |       | Meters Used |           |            |
|------------------|------------|------------|---------------------------------------------------|----------|--------------------------------------------------|-------|-------------|-----------|------------|
|                  |            | Measured   | Method to Determine Amount Lost                   |          |                                                  |       | Radio (%)   | Touch (%) | Manual (%) |
|                  |            |            | Comparison of Production & Customer Meter Volumes | Estimate | Recently Adopted IWA/AWWA Water Loss Methodology | Other |             |           |            |
| City Size <1,000 |            |            |                                                   |          |                                                  |       |             |           |            |
| Lonerock         | 34         |            |                                                   |          |                                                  |       |             |           |            |
| Monument         | 130        | No         |                                                   |          |                                                  |       | 0           | 0         | 100        |
| Idanha           | 135        | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Detroit          | 205        | Yes        |                                                   |          |                                                  |       |             |           |            |
| Sumpter          | 205        |            |                                                   |          |                                                  |       |             |           |            |
| Waterloo         | 230        | No         |                                                   |          |                                                  |       | 0           | 0         | 0          |
| Ukiah            | 235        | No         |                                                   |          |                                                  |       | 0           | 100       | 0          |
| Lexington        | 255        |            |                                                   |          |                                                  |       |             |           |            |
| Westfir          | 255        |            |                                                   |          |                                                  |       |             |           |            |
| Nehalem          | 280        | No         |                                                   |          |                                                  |       | 0           | 0         | 100        |
| Sodaville        | 310        | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Moro             | 325        | No         |                                                   |          |                                                  |       | 0           | 100       | 0          |
| Ione             | 330        |            |                                                   |          |                                                  |       |             |           |            |
| Adams            | 350        | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Scotts Mills     | 364        | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Haines           | 415        | No         |                                                   |          |                                                  |       | 0           | 0         | 0          |
| St. Paul         | 416        | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Mosier           | 433        | Yes        | ✓                                                 |          |                                                  |       | 99          | 0         | 0          |
| Rivergrove       | 445        |            |                                                   |          |                                                  |       |             |           |            |
| Huntington       | 445        |            |                                                   |          |                                                  |       |             |           |            |

| City                            | Population | Water Loss |                                                   |          |                                                  |       | Meters Used |           |            |
|---------------------------------|------------|------------|---------------------------------------------------|----------|--------------------------------------------------|-------|-------------|-----------|------------|
|                                 |            | Measured   | Method to Determine Amount Lost                   |          |                                                  |       | Radio (%)   | Touch (%) | Manual (%) |
|                                 |            |            | Comparison of Production & Customer Meter Volumes | Estimate | Recently Adopted IWA/AWWA Water Loss Methodology | Other |             |           |            |
| Fossil                          | 475        |            |                                                   |          |                                                  |       |             |           |            |
| Gates                           | 485        | Yes        | ✓                                                 |          |                                                  |       | 0           | 100       | 0          |
| Mount Vernon                    | 525        | No         |                                                   |          |                                                  |       | 0           | 0         | 100        |
| Cove                            | 550        |            |                                                   |          |                                                  |       |             |           |            |
| Manzanita                       | 615        | Yes        | ✓                                                 |          |                                                  |       | 0           | 50        | 50         |
| Arlington                       | 619        | No         |                                                   |          |                                                  |       | 0           | 100       | 0          |
| Weston                          | 675        |            |                                                   |          |                                                  |       |             |           |            |
| Condon                          | 685        |            |                                                   |          |                                                  |       | 0           | 0         | 100        |
| Powers                          | 695        | Yes        |                                                   |          |                                                  |       |             |           |            |
| Echo                            | 705        | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Yachats                         | 800        | Yes        | ✓                                                 |          |                                                  |       | 0           | 100       | 0          |
| Malin                           | 815        | Yes        |                                                   |          |                                                  | ✓     | 0           | 95        | 5          |
| Merrill                         | 845        | No         |                                                   |          |                                                  |       | 0           | 0         | 100        |
| Adair Village                   | 850        | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Glendale                        | 874        | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Prairie City                    | 910        |            |                                                   |          |                                                  |       |             |           |            |
| Halsey                          | 917        | Yes        | ✓                                                 |          |                                                  |       | 0           | 100       | 0          |
| Falls City                      | 950        | No         |                                                   |          |                                                  |       | 0           | 100       | 0          |
| Oakland                         | 980        | No         |                                                   |          |                                                  |       |             |           |            |
| Donald                          | 980        |            |                                                   |          |                                                  |       |             |           |            |
| <b>City Sizes 1,000 - 4,999</b> |            |            |                                                   |          |                                                  |       |             |           |            |

| City           | Population | Water Loss |                                                   |          |                                                  |       | Meters Used |           |            |
|----------------|------------|------------|---------------------------------------------------|----------|--------------------------------------------------|-------|-------------|-----------|------------|
|                |            | Measured   | Method to Determine Amount Lost                   |          |                                                  |       | Radio (%)   | Touch (%) | Manual (%) |
|                |            |            | Comparison of Production & Customer Meter Volumes | Estimate | Recently Adopted IWA/AWWA Water Loss Methodology | Other |             |           |            |
| Island City    | 1,015      | No         |                                                   |          |                                                  |       | 0           | 75        | 25         |
| Yamhill        | 1,020      | Yes        |                                                   |          |                                                  |       |             |           |            |
| Yoncalla       | 1,060      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Joseph         | 1,090      |            |                                                   |          |                                                  |       |             |           |            |
| Athena         | 1,125      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Port Orford    | 1,135      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Riddle         | 1,185      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Cascade Locks  | 1,200      | Yes        | ✓                                                 |          |                                                  |       | 10          | 80        | 10         |
| Gold Hill      | 1,220      | No         |                                                   |          |                                                  |       | 0           | 0         | 100        |
| Siletz         | 1,290      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Heppner        | 1,290      | Yes        | ✓                                                 |          |                                                  |       | 40          | 40        | 20         |
| Dunes City     | 1,310      | No         |                                                   |          |                                                  |       | N/A         | N/A       | N/A        |
| Bay City       | 1,310      | Yes        | ✓                                                 |          |                                                  |       | 37          | 0         | 63         |
| Rockaway Beach | 1,325      |            |                                                   |          |                                                  |       |             |           |            |
| Culver         | 1,370      |            |                                                   |          |                                                  |       |             |           |            |
| Depoe Bay      | 1,405      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Gearhart       | 1,465      | Yes        |                                                   | ✓        |                                                  |       | 25          | 0         | 75         |
| Hines          | 1,565      | No         |                                                   |          |                                                  |       | 635         | 0         | 35         |
| La Pine        | 1,670      | Yes        | ✓                                                 |          |                                                  |       | 100         | 0         | 0          |
| Brownsville    | 1,670      |            |                                                   |          |                                                  |       |             |           |            |
| Lakeside       | 1,705      |            |                                                   |          |                                                  |       |             |           |            |

| City          | Population | Water Loss |                                                   |          |                                                  |       | Meters Used |           |            |
|---------------|------------|------------|---------------------------------------------------|----------|--------------------------------------------------|-------|-------------|-----------|------------|
|               |            | Measured   | Method to Determine Amount Lost                   |          |                                                  |       | Radio (%)   | Touch (%) | Manual (%) |
|               |            |            | Comparison of Production & Customer Meter Volumes | Estimate | Recently Adopted IWA/AWWA Water Loss Methodology | Other |             |           |            |
| Clatskanie    | 1,729      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| John Day      | 1,745      | Yes        | ✓                                                 |          |                                                  |       | 100         | 0         | 0          |
| Banks         | 1,785      | No         |                                                   |          |                                                  |       | 0           | 0         | 100        |
| Irrigon       | 1,835      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Columbia City | 1,945      | Yes        | ✓                                                 |          |                                                  |       | 100         | 0         | 0          |
| Vale          | 1,976      | No         |                                                   |          |                                                  |       | 100         | 0         | 0          |
| Waldport      | 2,080      |            |                                                   |          |                                                  |       |             |           |            |
| Rogue River   | 2,145      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Union         | 2,240      | Yes        |                                                   | ✓        |                                                  |       |             |           |            |
| Vernonia      | 2,450      | Yes        |                                                   | ✓        |                                                  |       |             |           | 100        |
| Lakeview      | 2,490      | No         |                                                   |          |                                                  |       | 0           | 0         | 100        |
| Gervais       | 2,520      | No         |                                                   |          |                                                  |       | 99          | 0         | 1          |
| Myrtle Point  | 2,525      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Jacksonville  | 2,840      | Yes        | ✓                                                 |          |                                                  |       | 0           | 99        | 1          |
| Estacada      | 2,880      | Yes        | ✓                                                 |          |                                                  |       | 0           | 0         | 100        |
| Bandon        | 3,100      | Yes        | ✓                                                 |          |                                                  |       | 0           | 60        | 40         |
| Nyssa         | 3,200      | Yes        |                                                   |          |                                                  |       | 0           | 99        | 1          |
| Mt. Angel     | 3,300      | Yes        |                                                   | ✓        |                                                  |       | 0           | 0         | 100        |
| Boardman      | 3,405      |            |                                                   |          |                                                  |       |             |           |            |
| Toledo        | 3,465      | No         |                                                   |          |                                                  |       | 0           | 96        | 4          |
| Aumsville     | 3,750      | No         |                                                   |          |                                                  |       |             |           |            |

| City         | Population | Water Loss |                                                   |          |                                                  |       | Meters Used |           |            |
|--------------|------------|------------|---------------------------------------------------|----------|--------------------------------------------------|-------|-------------|-----------|------------|
|              |            | Measured   | Method to Determine Amount Lost                   |          |                                                  |       | Radio (%)   | Touch (%) | Manual (%) |
|              |            |            | Comparison of Production & Customer Meter Volumes | Estimate | Recently Adopted IWA/AWWA Water Loss Methodology | Other |             |           |            |
| Coquille     | 3,865      | Yes        |                                                   | ✓        |                                                  |       | 100         | 0         | 0          |
| Wood Village | 3,875      | Yes        | ✓                                                 |          |                                                  |       | 0           | 100       | 0          |
| Phoenix      | 4,585      | Yes        | ✓                                                 |          |                                                  |       | 0           | 80        | 20         |
| Philomath    | 4,625      |            |                                                   |          |                                                  |       |             |           |            |
| Veneta       | 4,635      | Yes        | ✓                                                 |          |                                                  |       | 100         | 0         | 0          |



| City Sizes 5,000 - 9,999   |        |     |   |   |  |   |       |    |       |
|----------------------------|--------|-----|---|---|--|---|-------|----|-------|
| Creswell                   | 5,031  | Yes | ✓ |   |  |   | 40    | 0  | 60    |
| Warrenton                  | 5,050  | Yes | ✓ |   |  |   | 6.4   | 45 | 48    |
| Sheridan                   | 6,170  | No  |   |   |  |   | 5     | 95 | 0     |
| Talent                     | 6,170  |     |   |   |  |   |       |    |       |
| Madras                     | 6,255  |     |   |   |  |   |       |    |       |
| Sutherlin                  | 7,930  |     |   |   |  |   |       |    |       |
| Molalla                    | 8,200  | Yes | ✓ |   |  |   | 80    | 0  | 20    |
| Florence                   | 8,466  | Yes | ✓ |   |  |   | 35    | 20 | 45    |
| Eagle Point                | 8,575  | Yes | ✓ |   |  |   | 100   | 0  | 0     |
| Independence               | 8,585  | Yes | ✓ |   |  |   |       |    |       |
| Sweet Home                 | 9,065  | Yes | ✓ |   |  |   | 0     | 25 | 75    |
| Silverton                  | 9,330  | Yes |   |   |  | ✓ | 56.45 | 0  | 43.55 |
| Astoria                    | 9,500  |     |   |   |  |   |       |    |       |
| Cottage Grove              | 9,785  | No  |   |   |  |   | 0     | 0  | 100   |
| Sandy                      | 9,980  | Yes | ✓ |   |  |   | 8     | 0  | 92    |
| City Sizes 10,000 - 24,999 |        |     |   |   |  |   |       |    |       |
| Gladstone                  | 11,495 |     |   |   |  |   |       |    |       |
| Cornelius                  | 12,161 | Yes | ✓ |   |  |   | 5     | 95 | 0     |
| St. Helens                 | 12,895 | Yes | ✓ |   |  |   | 43    | 0  | 57    |
| The Dalles                 | 14,400 | Yes | ✓ |   |  |   | 100   | 0  | 0     |
| Dallas                     | 14,800 | Yes |   | ✓ |  |   | 50    | 0  | 50    |
| Lebanon                    | 15,660 | Yes | ✓ |   |  |   | 0     | 25 | 75    |
| Troutdale                  | 16,015 |     |   |   |  |   |       |    |       |
| Coos Bay                   | 16,160 |     |   |   |  |   |       |    |       |
| Pendleton                  | 16,600 | Yes | ✓ |   |  |   | 0     | 85 | 15    |
| Sherwood                   | 18,771 | Yes | ✓ |   |  |   | 0     | 0  | 100   |

|                                   |         |     |   |  |   |   |     |      |      |
|-----------------------------------|---------|-----|---|--|---|---|-----|------|------|
| Ashland                           | 20,295  | Yes | ✓ |  |   |   | 15  | 0    | 85   |
| Milwaukie                         | 20,500  | Yes | ✓ |  |   |   | 0   | 0    | 100  |
| Klamath Falls                     | 21,200  | Yes | ✓ |  |   |   | 50  | 30   | 20   |
| Wilsonville                       | 21,550  | Yes | ✓ |  |   | ✓ | 20  | 55   | 25   |
| Forest Grove                      | 22,000  | Yes |   |  |   |   |     |      |      |
| Roseburg                          | 22,275  | Yes | ✓ |  |   |   | 0   | 0    | 100  |
| Newberg                           | 22,396  | Yes | ✓ |  |   |   | 100 | 0    | 0    |
| <b>City Sizes 25,000 - 49,999</b> |         |     |   |  |   |   |     |      |      |
| West Linn                         | 25,425  | Yes | ✓ |  |   |   | 0   | 0    | 100  |
| Redmond                           | 26,590  | Yes | ✓ |  |   |   | 100 | 0    | 0    |
| Oregon City                       | 33,390  | Yes | ✓ |  |   |   | 0   | 0    | 100  |
| Grants Pass                       | 35,000  | Yes | ✓ |  |   |   | 0   | 0    | 100  |
| Lake Oswego                       | 36,990  | Yes | ✓ |  |   |   | 0   | 0    | 100  |
| Tigard                            | 49,135  | Yes | ✓ |  |   |   | 1   | 24   | 75   |
| <b>City Sizes 50,000 or more</b>  |         |     |   |  |   |   |     |      |      |
| Albany                            | 50,720  | Yes |   |  | ✓ |   | 0   | 10   | 90   |
| Springfield                       | 59,990  |     |   |  |   |   |     |      |      |
| Medford                           | 76,300  | Yes | ✓ |  |   | ✓ | 33  | 11.5 | 55.5 |
| Bend                              | 81,000  | Yes |   |  | ✓ |   | 100 | 0    | 0    |
| Hillsboro                         | 81,310  | Yes |   |  | ✓ |   | 65  | 0.4  | 34.6 |
| Beaverton                         | 93,000  | Yes | ✓ |  |   |   | 0   | 2    | 98   |
| Salem                             | 157,888 | Yes |   |  |   |   | 15  | 85   | 0    |
| Portland                          | 592,120 |     |   |  |   |   |     |      |      |

**Table C.5: Water System Characteristics**

| City Size      | Annual Avg. Water Consumption for Residential Customers (gallons) | Total Miles of Lines (not laterals) | # of Pump/Lift Stations | # of Service Levels or Zones | Avg. Distance of Water Source From City (Miles) | Avg. Year of Original Construction | Date of Last Major Upgrade | Design Capacity Water Plant(s) (MGD) | Average Capacity Water Source (GPD) |
|----------------|-------------------------------------------------------------------|-------------------------------------|-------------------------|------------------------------|-------------------------------------------------|------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| <1,000         | 25,988,626                                                        | 8                                   | 2                       | 1                            | 1                                               | 1966                               | 2000                       | 1                                    | 1,087,391                           |
| 1,000-4,999    | 80,087,547                                                        | 19                                  | 2                       | 2                            | 2                                               | 1964                               | 2004                       | 1                                    | 1,867,815                           |
| 5,000-9,999    | 277,638,458                                                       | 46                                  | 2                       | 3                            | 5                                               | 1969                               | 2005                       | 4                                    | 7,510,300                           |
| 10,000-24,999  | 810,565,871                                                       | 107                                 | 6                       | 5                            | 2                                               | 1938                               | 2005                       | 11                                   | 19,064,818                          |
| 25,000-49,999  | 1,109,071,261                                                     | 185                                 | 12                      | 8                            | 4                                               | 1943                               | 2000                       | 16                                   | 32,588,480                          |
| 50,000 or more | 2,442,314,780                                                     | 427                                 | 9                       | 6                            | 13                                              | 1953                               | 2005                       | 46                                   | 539,806,677                         |
| All cities     | 437,562,291                                                       | 76                                  | 4                       | 3                            | 3                                               | 1960                               | 2003                       | 9                                    | 54,853,942                          |

| City                       | Population | Annual Avg. Water Consumption for Residential Customers (gallons) | Total Miles of Lines (not laterals) | # of Pump/Lift Stations | # of Service Levels or Zones | Avg. Distance of Water Source From City (Miles) | Avg. Year of Original Construction | Date of Last Major Upgrade | Design Capacity Water Plant(s) (MGD) | Average Capacity Water Source (GPD) |
|----------------------------|------------|-------------------------------------------------------------------|-------------------------------------|-------------------------|------------------------------|-------------------------------------------------|------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| <b>City Size &lt;1,000</b> |            |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Lonerock                   | 34         | 954,830                                                           | 1.0                                 | 2                       | 1                            | 0                                               | 2004                               | 2008                       |                                      | 29,000                              |
| Monument                   | 130        |                                                                   |                                     | 1                       |                              | 0                                               |                                    |                            |                                      |                                     |
| Idanha                     | 135        | 7,838,640                                                         |                                     |                         |                              |                                                 |                                    |                            |                                      | 252,000                             |
| Detroit                    | 205        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Sumpter                    | 205        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Waterloo                   | 230        |                                                                   | 0                                   | 0                       | 0                            | 0                                               | N/A                                | N/A                        | N/A                                  | N/A                                 |

| City         | Population | Annual Avg. Water Consumption for Residential Customers (gallons) | Total Miles of Lines (not laterals) | # of Pump/Lift Stations | # of Service Levels or Zones | Avg. Distance of Water Source From City (Miles) | Avg. Year of Original Construction | Date of Last Major Upgrade | Design Capacity Water Plant(s) (MGD) | Average Capacity Water Source (GPD) |
|--------------|------------|-------------------------------------------------------------------|-------------------------------------|-------------------------|------------------------------|-------------------------------------------------|------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| Ukiah        | 235        |                                                                   | Unknown                             | 1                       | 1                            | 0                                               | 1978                               | 2005                       | Unknown                              | Unlimited                           |
| Lexington    | 255        | 18,180,000                                                        |                                     |                         |                              |                                                 |                                    |                            |                                      | 300,000                             |
| Westfir      | 255        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Nehalem      | 280        |                                                                   | 27                                  | 0                       | 0                            | 2.0                                             | 1927                               | 2009                       | 1                                    | 300,000                             |
| Sodaville    | 310        | 16,102,020                                                        | 4.5                                 | 6                       | 3                            | 0                                               | 1980                               | 2002                       | N/A                                  | Unknown                             |
| Moro         | 325        |                                                                   |                                     | 0                       | 0                            | 0                                               |                                    | 2007                       |                                      |                                     |
| Ione         | 330        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Adams        | 350        |                                                                   | 5.0                                 | 1                       | 1                            | 0                                               | 1989                               | 2000                       | N/A                                  | 540,000                             |
| Scotts Mills | 364        |                                                                   |                                     |                         | 1                            | 0                                               |                                    | 2011                       |                                      |                                     |
| Haines       | 415        | 44,000,000                                                        | 5.0                                 | 0                       | 0                            | 0                                               | 1910                               | 1981                       | 0.035                                | 1,152,000                           |
| St. Paul     | 416        | 13,050,000                                                        | 1.0                                 | 1                       | 0                            | 0                                               | 1950                               | 1979                       | 0.432                                | 432,000                             |
| Mosier       | 433        | 23,160,000                                                        | Unknown                             | 4                       | 5                            | 1.0                                             | 2006                               | 2014                       |                                      | 864,000                             |
| Rivergrove   | 445        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Huntington   | 445        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Fossil       | 475        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Gates        | 485        | 14,773,248                                                        | 7.0                                 | 1                       | 2                            | 0                                               | 1950                               | 2009                       |                                      |                                     |
| Mount Vernon | 525        | 23,927,000                                                        |                                     |                         | 1                            | 1.0                                             |                                    |                            |                                      |                                     |
| Cove         | 550        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Manzanita    | 615        | 25,704,000                                                        | 20                                  | 3                       | 2                            | 7.0                                             | Unknown                            | 2003                       |                                      | 2,345,760                           |
| Arlington    | 619        | 73,733,100                                                        | 9.0                                 | 4                       | 4                            | 0                                               | 1964                               | 2004                       | 0                                    | 4,000,000*                          |
| Weston       | 675        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Condon       | 685        |                                                                   |                                     |                         |                              | 5.0                                             |                                    | Underway                   |                                      |                                     |

| City                            | Population | Annual Avg. Water Consumption for Residential Customers (gallons) | Total Miles of Lines (not laterals) | # of Pump/Lift Stations | # of Service Levels or Zones | Avg. Distance of Water Source From City (Miles) | Avg. Year of Original Construction | Date of Last Major Upgrade | Design Capacity Water Plant(s) (MGD) | Average Capacity Water Source (GPD) |
|---------------------------------|------------|-------------------------------------------------------------------|-------------------------------------|-------------------------|------------------------------|-------------------------------------------------|------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| Powers                          | 695        | 25,350,000                                                        |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Echo                            | 705        | 40,000,000                                                        | 6.0                                 | 1                       | 2                            | 0                                               | 1980                               | 1980                       | 2.3                                  | 1,000,000                           |
| Yachats                         | 800        | 37,030,000                                                        | 14                                  | 3                       | 6                            | <1                                              | No                                 | 1998                       | 1.0                                  | 864,000                             |
| Malin                           | 815        | 25,350,000                                                        | 6.0                                 | 1                       | 1                            | 0                                               | 1930                               | 1999                       | 0.125                                |                                     |
| Merrill                         | 845        | 28,543,680                                                        | 5.0                                 | 2                       |                              |                                                 | 1962                               | None                       | 0.05                                 | 500,000                             |
| Adair Village                   | 850        | 27,360,000                                                        | 14                                  | 2                       | 1                            | 6.0                                             | 1942                               | 1957                       | 1.2                                  | 1,938,951                           |
| Glendale                        | 874        | 17,980,000                                                        | 6.8                                 | 2                       | 1                            | 0                                               | 1971                               | 2013                       | 0.504                                | 1,564,000                           |
| Prairie City                    | 910        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Halsey                          | 917        | 23,112,000                                                        | 6.0                                 | 2                       | 0                            | N/A                                             | 1969                               | 1998                       | 0.75                                 | 1,316,547                           |
| Falls City                      | 950        |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Oakland                         | 980        |                                                                   |                                     |                         |                              |                                                 | 2003                               | 2014                       |                                      |                                     |
| Donald                          | 980        | 33,624,000                                                        |                                     | 0                       | 0                            | 0                                               | 1970s                              | 2015                       |                                      |                                     |
| <b>City Sizes 1,000 - 4,999</b> |            |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Island City                     | 1,015      | 63,856,856                                                        | 10                                  | 1                       | 1                            | 0                                               | 1994                               | 2014                       | 0.27                                 | 750,000                             |
| Yamhill                         | 1,020      | 29,160,000                                                        |                                     |                         |                              | 5.0                                             |                                    |                            |                                      |                                     |
| Yoncalla                        | 1,060      | 38,868,396                                                        | 35                                  | 1                       | 0                            | 8.0                                             | Unknown                            | 1996                       | Unknown                              |                                     |
| Joseph                          | 1,090      |                                                                   |                                     | 0                       | 0                            | 1.0                                             | 1992                               | 1992                       |                                      | 1,000,000                           |
| Athena                          | 1,125      | 39,525,000                                                        | 10                                  | 0                       | 1                            | 0                                               |                                    | 1993                       | N/A                                  | 1,296,000                           |
| Port Orford                     | 1,135      |                                                                   | 17                                  |                         |                              | 2.0                                             |                                    |                            |                                      |                                     |
| Riddle                          | 1,185      |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Cascade Locks                   | 1,200      | 58,176,000                                                        | 15                                  | 4                       | 1                            | 0                                               | 1888                               | 1978                       | 0                                    | 9,694,080                           |
| Gold Hill                       | 1,220      |                                                                   |                                     | 0                       | 1                            | 0                                               | 1981                               | 1981                       |                                      |                                     |

| City           | Population | Annual Avg. Water Consumption for Residential Customers (gallons) | Total Miles of Lines (not laterals) | # of Pump/Lift Stations | # of Service Levels or Zones | Avg. Distance of Water Source From City (Miles) | Avg. Year of Original Construction | Date of Last Major Upgrade | Design Capacity Water Plant(s) (MGD) | Average Capacity Water Source (GPD) |
|----------------|------------|-------------------------------------------------------------------|-------------------------------------|-------------------------|------------------------------|-------------------------------------------------|------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| Siletz         | 1,290      | 40,500,000                                                        | 10                                  | 2                       | 0                            | 0                                               | 1973                               | 2013                       | 0.4                                  | 335,520                             |
| Heppner        | 1,290      | 42,768,000                                                        | 15                                  | 1                       | 1                            | 18                                              | 1930s                              | 2006                       | 1.5                                  | 1,800,000                           |
| Dunes City     | 1,310      | 123,943,376                                                       | 0                                   | 0                       | 0                            | 0                                               | N/A                                | N/A                        | N/A                                  | N/A                                 |
| Bay City       | 1,310      |                                                                   | 11                                  | 1                       | 2                            | 5.0                                             | 1980                               | 2013                       | N/A                                  |                                     |
| Rockaway Beach | 1,325      |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Culver         | 1,370      |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Depoe Bay      | 1,405      |                                                                   |                                     | 5                       | 0                            | 1.0                                             | 1950s                              | 2007                       | 0.72                                 | 720,000                             |
| Gearhart       | 1,465      |                                                                   |                                     | 0                       | 0                            | 0                                               | 2011                               | 2011                       |                                      |                                     |
| Hines          | 1,565      | 37,500,000                                                        | 15                                  | 4                       | 1                            | 0                                               | 1928                               | 2001                       | N/A                                  | Unknown                             |
| La Pine        | 1,670      |                                                                   | 24                                  | 2                       |                              | 2.0                                             | 2002                               | 2009                       |                                      | 1,441,440                           |
| Brownsville    | 1,670      | 35,113,220                                                        |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Lakeside       | 1,705      |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Clatskanie     | 1,729      | 89,668,300                                                        | 48                                  | 3                       | 14                           | 1.6                                             | 1985                               | 2004                       | 1.0                                  | 1,200,000                           |
| John Day       | 1,745      | 103,320,000                                                       | 20                                  | 4                       | 3                            | 0                                               | late 1960's                        | 2004                       | N/A                                  | 816,480                             |
| Banks          | 1,785      |                                                                   |                                     |                         |                              |                                                 |                                    | 2012                       | 0.288                                | 576,000                             |
| Irrigon        | 1,835      | 92,160,000                                                        | 22                                  | 9                       | 0                            | 1.5                                             | 1964                               | 2009                       | 1.5                                  |                                     |
| Columbia City  | 1,945      | 45,604,350                                                        | 16                                  | 2                       | 4                            | 0                                               | 2007                               | 2014                       | 0.31                                 |                                     |
| Vale           | 1,976      | 46,866,000                                                        |                                     | 3                       | 1                            | 0.5                                             | 1950                               | 2005                       | 0.765                                | 1,152,000                           |
| Waldport       | 2,080      | 91,196,160                                                        | 23                                  | 2                       |                              | 6.0                                             | 1927                               | 2013                       | 0.75                                 |                                     |
| Rogue River    | 2,145      | 54,613,440                                                        | 15                                  | N/A                     | 1                            | 0                                               | 1974                               | 2010                       | 1.0                                  | 1,500,000                           |
| Union          | 2,240      |                                                                   |                                     |                         |                              | 0                                               | 1968                               | 1989                       | 0.75                                 |                                     |
| Vernonia       | 2,450      | 22,152,000                                                        | Unknown                             | 3                       | 3                            | 20                                              |                                    |                            |                                      |                                     |

| City                            | Population | Annual Avg. Water Consumption for Residential Customers (gallons) | Total Miles of Lines (not laterals) | # of Pump/Lift Stations | # of Service Levels or Zones | Avg. Distance of Water Source From City (Miles) | Avg. Year of Original Construction | Date of Last Major Upgrade | Design Capacity Water Plant(s) (MGD) | Average Capacity Water Source (GPD) |
|---------------------------------|------------|-------------------------------------------------------------------|-------------------------------------|-------------------------|------------------------------|-------------------------------------------------|------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| Lakeview                        | 2,490      |                                                                   |                                     | 1                       | 1                            | 1.0                                             |                                    | Underway                   | 4                                    |                                     |
| Gervais                         | 2,520      | 59,306,650                                                        | 5.5                                 | 2                       | 0                            | 0                                               |                                    | 1997-98                    |                                      | Unlimited                           |
| Myrtle Point                    | 2,525      | 63,961,200                                                        | 16                                  | 1                       | 2                            | 0.75                                            | 1933                               | 2001                       | 1.73                                 | 1,870,000                           |
| Jacksonville                    | 2,840      | 173,607,267                                                       | 29                                  | 3                       |                              | 2.0                                             | 1955                               | 1997                       | 2                                    | 2,000,000                           |
| Estacada                        | 2,880      | 84,000,000                                                        | 16                                  | 0                       | 0                            | 0                                               | 1970                               | 2006                       | 2                                    | 2,000,000                           |
| Bandon                          | 3,100      | 90,300,600                                                        | 30                                  | 3                       | N/A                          | 1.0                                             | 1953                               | 2000                       | 2                                    |                                     |
| Nyssa                           | 3,200      |                                                                   | 20                                  | 5                       | 0                            | 0                                               |                                    | 1995                       | N/A                                  | 1,440,000                           |
| Mt. Angel                       | 3,300      | 123,734,160                                                       | 20                                  | 0                       | 1                            | 0.5                                             | Unknown                            | 2014                       | N/A                                  | 2,541,600                           |
| Boardman                        | 3,405      |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Toledo                          | 3,465      | 147,475,680                                                       | 35                                  | 4                       | 3                            | 6.5                                             | 1960                               | 2014                       | 3                                    | 1,700,000                           |
| Aumsville                       | 3,750      | 114,791,000                                                       | 11                                  | 1                       | 1                            | 0                                               | 1960                               | 1985                       |                                      |                                     |
| Coquille                        | 3,865      | 193,680,000                                                       | 25                                  | 4                       | 4                            | 1.15                                            | 1930                               | 2009                       | 2.75                                 | 1,762,000                           |
| Wood Village                    | 3,875      | 33,655,440                                                        | 12                                  | 3                       | 2                            | 0                                               | 1951                               | 2011                       |                                      | 2,300,000                           |
| Phoenix                         | 4,585      | 115,170,300                                                       | 20                                  | 4                       |                              | 6.5                                             |                                    | 2000                       |                                      |                                     |
| Philomath                       | 4,625      |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Veneta                          | 4,635      | 147,953,000                                                       | 32                                  | 2                       | 2                            | 0                                               | 1967                               | 2013                       | 0.72                                 | 3,196,800                           |
| <b>City Sizes 5,000 - 9,999</b> |            |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Creswell                        | 5,031      | 172,652,018                                                       | 30                                  | 1                       | 1                            |                                                 | 1990                               | 2009                       | 3.8                                  | 3,800,000                           |
| Warrenton                       | 5,050      | 314,870,372                                                       | 85                                  | 2                       | 2                            | 10                                              | 1978                               | 2006                       | 6                                    | 6,500,000 – 20,000,000*             |
| Sheridan                        | 6,170      |                                                                   | 20                                  | 0                       | 0                            | 11                                              | 1927                               | 2008                       | 4                                    | Unknown                             |
| Talent                          | 6,170      | 87,055,750                                                        |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |

| City                              | Population | Annual Avg. Water Consumption for Residential Customers (gallons) | Total Miles of Lines (not laterals) | # of Pump/Lift Stations | # of Service Levels or Zones | Avg. Distance of Water Source From City (Miles) | Avg. Year of Original Construction | Date of Last Major Upgrade | Design Capacity Water Plant(s) (MGD) | Average Capacity Water Source (GPD) |
|-----------------------------------|------------|-------------------------------------------------------------------|-------------------------------------|-------------------------|------------------------------|-------------------------------------------------|------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| Madras                            | 6,255      |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Sutherlin                         | 7,930      |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Molalla                           | 8,200      | 365,900,000                                                       | 37                                  | 1                       | 0                            | 2.0                                             | 1977                               | 1998                       | 4                                    | 2,000,000                           |
| Florence                          | 8,466      | 188,299,344                                                       | 45                                  | 3                       | 3                            | 0                                               | 1968                               | 2004                       | 3                                    | 3,000,000                           |
| Eagle Point                       | 8,575      |                                                                   | 38                                  | 3                       | 3                            | 5.0                                             | 1960s                              | 2011                       |                                      | 7,400,000                           |
| Independence                      | 8,585      |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Sweet Home                        | 9,065      | 426,732,780                                                       | 65                                  | 0                       | 3                            | 0                                               | 2009                               | 2009                       | 6                                    | 21,182,400                          |
| Silverton                         | 9,330      | 264,095,000                                                       | 58                                  | 3                       | 7                            | 7.0                                             | 1911                               | 1982                       | 5.6                                  | 9,700,000                           |
| Astoria                           | 9,500      |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Cottage Grove                     | 9,785      | 401,502,400                                                       | 49                                  | 4                       | 3                            | 0                                               | 1992                               | 2008                       | 4                                    | 7,000,000                           |
| Sandy                             | 9,980      |                                                                   | 29                                  | 4                       | 3                            | 5.7                                             | 1972                               | 2013                       | 2                                    | 6,000,000                           |
| <b>City Sizes 10,000 - 24,999</b> |            |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Gladstone                         | 11,495     |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Cornelius                         | 12,161     |                                                                   | 32                                  | 0                       | 1                            | 0                                               | 1940                               | 2014                       | N/A                                  | Unlimited                           |
| St. Helens                        | 12,895     | 218,521,800                                                       | 76                                  | 1                       | 2                            | 0.45                                            | 1910's                             | 2006                       | 6                                    | 41,000,000                          |
| The Dalles                        | 14,400     | 449,600,000                                                       | 104                                 | 3                       | 13                           | 7.0                                             | 1949                               | 2007                       | 6.05                                 | 10,400,00                           |
| Dallas                            | 14,800     | 830,922,500                                                       | 46                                  | 3                       | 3                            | 4.0                                             | 1920                               | 2007                       | 8.5                                  | 13,000,000                          |
| Lebanon                           | 15,660     | 702,820,800                                                       | 56                                  | 1                       | 1                            | 3.0                                             | 1946                               | 1996                       | 4                                    | 24,000,000                          |
| Troutdale                         | 16,015     |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Coos Bay                          | 16,160     |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Pendleton                         | 16,600     | 610,000,000                                                       | 108                                 | 14                      | 8                            | 0.2                                             | 1900-1910                          | 2003                       | 15                                   | 23,400,000                          |
| Sherwood                          | 18,771     | 383,040,000                                                       | 70                                  | 2                       | 4                            | 6.0                                             | Unknown                            | 2009                       | 15                                   | 15,000,000                          |



| City                              | Population | Annual Avg. Water Consumption for Residential Customers (gallons) | Total Miles of Lines (not laterals) | # of Pump/Lift Stations | # of Service Levels or Zones | Avg. Distance of Water Source From City (Miles) | Avg. Year of Original Construction | Date of Last Major Upgrade | Design Capacity Water Plant(s) (MGD) | Average Capacity Water Source (GPD) |
|-----------------------------------|------------|-------------------------------------------------------------------|-------------------------------------|-------------------------|------------------------------|-------------------------------------------------|------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| Ashland                           | 20,295     | 503,180,340                                                       | 126                                 | 4                       | 16                           | 1.48                                            | 1949                               | 1995                       | 10                                   | 13,513,000                          |
| Milwaukie                         | 20,500     | 871,250,000                                                       | 112                                 | 4                       | 4                            | 0                                               | 1903                               | 2013                       | 7.3                                  | 7,300,000                           |
| Klamath Falls                     | 21,200     | 2,456,450,000                                                     | 260                                 | 23                      | 8                            | 0                                               | 1895                               | 2014                       | 26.5                                 | 26,500,000                          |
| Wilsonville                       | 21,550     | 255,000,000                                                       | 106                                 | 2                       | 3                            | 0                                               | 2002                               | None                       | 15                                   | 20,000,000                          |
| Forest Grove                      | 22,000     | 421,800,000                                                       |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Roseburg                          | 22,275     | 2,073,970,880                                                     | 192                                 | 21                      | 4                            | 5.0                                             | 1935                               | 1992                       | 12                                   | 20,000,000                          |
| Newberg                           | 22,396     | 760,800,000                                                       | 110                                 | 1                       | 4                            | 0.5                                             | 1900s                              | 2008                       | 9                                    | 6,000,000                           |
| <b>City Sizes 25,000 - 49,999</b> |            |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| West Linn                         | 25,425     | 900,000,000                                                       | 118                                 | 25                      | 6                            | 10                                              | 1920                               | 1990                       | 5                                    | 2,000,000                           |
| Redmond                           | 26,590     | 1,105,634,000                                                     | 164                                 | 10                      | 3                            | 0                                               | 1940                               | 2014                       | 17.9                                 | 17,942,400                          |
| Oregon City                       | 33,390     |                                                                   | 167                                 | 5                       | 14                           | <1                                              | ~1940                              | 2012                       | 22                                   | 52,000,000                          |
| Grants Pass                       | 35,000     | 927,722,304                                                       | 187                                 | 13                      | 5                            | 0                                               | 1930s                              | 1984                       | 18                                   | 75,000,000                          |
| Lake Oswego                       | 36,990     | 1,092,000,000                                                     | 250                                 | 13                      | 11                           | 4.9                                             | 1968                               | 2001                       | 16                                   | 16,000,000                          |
| Tigard                            | 49,135     | 1,520,000,000                                                     | 225                                 | 6                       | 6                            |                                                 |                                    |                            |                                      |                                     |
| <b>City Sizes 50,000 or more</b>  |            |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Albany                            | 50,720     | 1,354,492,540                                                     | 285                                 | 5                       | 1                            | 11.5                                            | 1920                               | 2005                       | 40                                   | 32,000,000                          |
| Springfield                       | 59,990     |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |
| Medford                           | 76,300     | 2,982,200,000                                                     | 475                                 | 12                      | 9                            | 16.4                                            | 1948                               | 1997                       | 45                                   | 91,000,000                          |
| Bend                              | 81,000     | 3,066,000,000                                                     | 466                                 | 4                       | 7                            | 10                                              |                                    | 2014                       | 12                                   | 32,000,000                          |
| Hillsboro                         | 81,310     | 1,915,363,956                                                     | 302                                 | 3                       | 2                            | 7.0                                             | 1983                               |                            | 34                                   | 36,840,062                          |
| Beaverton                         | 93,000     | 2,628,000,000                                                     | 284                                 | 4                       | 10                           | 20                                              | 1977                               |                            | 19                                   | 2,900,000,000                       |
| Salem                             | 157,888    | 2,707,832,182                                                     | 749                                 | 23                      | 5                            | 15                                              | 1936                               | 2006                       | 126                                  | 147,000,000                         |

| City     | Population | Annual Avg. Water Consumption for Residential Customers (gallons) | Total Miles of Lines (not laterals) | # of Pump/Lift Stations | # of Service Levels or Zones | Avg. Distance of Water Source From City (Miles) | Avg. Year of Original Construction | Date of Last Major Upgrade | Design Capacity Water Plant(s) (MGD) | Average Capacity Water Source (GPD) |
|----------|------------|-------------------------------------------------------------------|-------------------------------------|-------------------------|------------------------------|-------------------------------------------------|------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| Portland | 592,120    |                                                                   |                                     |                         |                              |                                                 |                                    |                            |                                      |                                     |

\*Values flagged for review, but city unable to confirm value.

**Table C.5: Water Storage**

| City Size      | # of Cities per Raw Storage Type |                         |     |       |           | # of Cities per Treated Storage Type |                         |     |       |           |
|----------------|----------------------------------|-------------------------|-----|-------|-----------|--------------------------------------|-------------------------|-----|-------|-----------|
|                | Closed Tank                      | Covered Urban Reservoir | ASR | Other | Reservoir | Closed Tank                          | Covered Urban Reservoir | ASR | Other | Reservoir |
| <1,000         | 6                                | 2                       | 0   | 1     | 0         | 10                                   | 2                       | 0   | 0     | 5         |
| 1,000-4,999    | 5                                | 1                       | 0   | 0     | 7         | 20                                   | 1                       | 0   | 0     | 6         |
| 5,000-9,999    | 0                                | 0                       | 0   | 0     | 2         | 7                                    | 1                       | 0   | 0     | 3         |
| 10,000-24,999  | 1                                | 0                       | 0   | 1     | 3         | 12                                   | 2                       | 2   | 0     | 1         |
| 25,000-49,999  | 1                                | 1                       | 0   | 0     | 1         | 4                                    | 1                       | 1   | 0     | 0         |
| 50,000 or more | 0                                | 0                       | 0   | 0     | 2         | 5                                    | 2                       | 2   | 0     | 1         |
| All cities     | 13                               | 4                       | 0   | 2     | 15        | 58                                   | 9                       | 5   | 0     | 16        |

| City              | Population | Raw              |                              |          |            |                | Treated          |                              |          |            |                |
|-------------------|------------|------------------|------------------------------|----------|------------|----------------|------------------|------------------------------|----------|------------|----------------|
|                   |            | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) |
| City Sizes <1,000 |            |                  |                              |          |            |                |                  |                              |          |            |                |
| Lonerock          | 34         |                  |                              |          |            |                |                  |                              |          |            |                |
| Monument          | 130        |                  |                              |          |            |                |                  |                              |          |            |                |
| Idanha            | 135        |                  |                              |          |            |                |                  |                              |          |            |                |
| Detroit           | 205        |                  |                              |          |            |                |                  |                              |          |            |                |
| Sumpter           | 205        |                  |                              |          |            |                |                  |                              |          |            |                |
| Waterloo          | 230        |                  |                              |          |            |                |                  |                              |          |            |                |
| Ukiah             | 235        |                  | 0.40                         |          |            |                |                  |                              |          |            |                |

| City         | Population | Raw              |                              |          |            |                | Treated          |                              |          |            |                |
|--------------|------------|------------------|------------------------------|----------|------------|----------------|------------------|------------------------------|----------|------------|----------------|
|              |            | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) |
| Lexington    | 255        |                  |                              |          |            |                |                  |                              |          |            |                |
| Westfir      | 255        |                  |                              |          |            |                |                  |                              |          |            |                |
| Nehalem      | 280        |                  | 1.25                         |          |            |                | 1.5              |                              |          |            |                |
| Sodaville    | 310        | 0.15             |                              |          |            |                |                  |                              |          |            |                |
| Moro         | 325        |                  |                              |          |            |                |                  |                              |          |            |                |
| Ione         | 330        |                  |                              |          |            |                |                  |                              |          |            |                |
| Adams        | 350        | 0.25             |                              |          |            |                |                  |                              |          |            |                |
| Scotts Mills | 364        |                  |                              |          |            |                |                  |                              |          |            |                |
| Haines       | 415        |                  |                              |          |            |                | 0.04             |                              |          |            |                |
| St. Paul     | 416        |                  |                              |          |            |                | 0.1              | 0.1                          |          |            |                |
| Mosier       | 433        |                  |                              |          |            |                |                  |                              |          |            |                |
| Rivergrove   | 445        |                  |                              |          |            |                |                  |                              |          |            |                |
| Huntington   | 445        |                  |                              |          |            |                |                  |                              |          |            |                |
| Fossil       | 475        |                  |                              |          |            |                |                  |                              |          |            |                |
| Gates        | 485        |                  |                              |          |            |                | 0.50             |                              |          |            |                |
| Mount Vernon | 525        |                  |                              |          |            |                | 1                |                              |          |            | 1              |
| Cove         | 550        |                  |                              |          |            |                |                  |                              |          |            |                |
| Manzanita    | 615        | 0.03             |                              |          |            |                | 0.08             |                              |          |            | 2.35           |
| Arlington    | 619        |                  |                              |          |            |                |                  |                              |          |            |                |
| Weston       | 675        |                  |                              |          |            |                |                  |                              |          |            |                |
| Condon       | 685        |                  |                              |          |            |                |                  |                              |          |            |                |
| Powers       | 695        |                  |                              |          |            |                |                  |                              |          |            |                |

| City                            | Population | Raw              |                              |          |            |                | Treated          |                              |          |            |                |
|---------------------------------|------------|------------------|------------------------------|----------|------------|----------------|------------------|------------------------------|----------|------------|----------------|
|                                 |            | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) |
| Echo                            | 705        |                  |                              |          |            |                |                  |                              |          |            | 0.35           |
| Yachats                         | 800        | 0.5              |                              |          |            |                | 1.25             |                              |          |            |                |
| Malin                           | 815        | 2                |                              |          |            |                |                  |                              |          |            |                |
| Merrill                         | 845        | 0.05             |                              |          |            |                |                  |                              |          |            |                |
| Adair Village                   | 850        |                  |                              |          |            |                | 1.1              |                              |          |            |                |
| Glendale                        | 874        |                  |                              |          | 1.563      |                | 1                |                              |          |            |                |
| Prairie City                    | 910        |                  |                              |          |            |                |                  |                              |          |            |                |
| Halsey                          | 917        |                  |                              |          |            |                |                  |                              |          |            | 0.075          |
| Falls City                      | 950        |                  |                              |          |            |                |                  |                              |          |            |                |
| Oakland                         | 980        |                  |                              |          |            |                | 2                | 2                            |          |            | 2              |
| Donald                          | 980        |                  |                              |          |            |                |                  |                              |          |            |                |
| <b>City Sizes 1,000 - 4,999</b> |            |                  |                              |          |            |                |                  |                              |          |            |                |
| Island City                     | 1,015      |                  | 1                            |          |            |                |                  |                              |          |            |                |
| Yamhill                         | 1,020      |                  |                              |          |            |                |                  |                              |          |            |                |
| Yoncalla                        | 1,060      |                  |                              |          |            | 3              | 0.75             |                              |          |            |                |
| Joseph                          | 1,090      |                  |                              |          |            |                |                  |                              |          |            |                |
| Athena                          | 1,125      | 0.75             |                              |          |            |                |                  |                              |          |            |                |
| Port Orford                     | 1,135      |                  |                              |          |            |                |                  |                              |          |            |                |
| Riddle                          | 1,185      |                  |                              |          |            |                |                  |                              |          |            |                |
| Cascade Locks                   | 1,200      | 0.4              |                              |          |            |                |                  |                              |          |            |                |
| Gold Hill                       | 1,220      | 1                |                              |          |            |                |                  |                              |          |            |                |
| Siletz                          | 1,290      |                  |                              |          |            | 1.5            | 1                |                              |          |            |                |

| City           | Population | Raw              |                              |          |            |                | Treated          |                              |          |            |                |
|----------------|------------|------------------|------------------------------|----------|------------|----------------|------------------|------------------------------|----------|------------|----------------|
|                |            | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) |
| Heppner        | 1,290      | 3                |                              |          |            |                |                  |                              |          |            |                |
| Dunes City     | 1,310      | N/A              | N/A                          | N/A      | N/A        | N/A            | N/A              | N/A                          | N/A      | N/A        | N/A            |
| Bay City       | 1,310      |                  |                              |          |            |                | 1.3              |                              |          |            |                |
| Rockaway Beach | 1,325      |                  |                              |          |            |                |                  |                              |          |            |                |
| Culver         | 1,370      |                  |                              |          |            |                |                  |                              |          |            |                |
| Depoe Bay      | 1,405      |                  |                              |          |            | 2.8            | 2                |                              |          |            |                |
| Gearhart       | 1,465      |                  |                              |          |            |                | 0.25             |                              |          |            | 1              |
| Hines          | 1,565      |                  |                              |          |            | 0.85           |                  |                              |          |            |                |
| La Pine        | 1,670      |                  |                              |          |            |                |                  |                              |          |            |                |
| Brownsville    | 1,670      |                  |                              |          |            |                |                  |                              |          |            |                |
| Lakeside       | 1,705      |                  |                              |          |            |                |                  |                              |          |            |                |
| Clatskanie     | 1,729      |                  |                              |          |            |                | 1                |                              |          |            | 1              |
| John Day       | 1,745      |                  |                              |          |            |                |                  |                              |          |            | 2.4            |
| Banks          | 1,785      |                  |                              |          |            |                | 1.7              |                              |          |            |                |
| Irrigon        | 1,835      |                  |                              |          |            |                | 1                |                              |          |            |                |
| Columbia City  | 1,945      |                  |                              |          |            |                | 0.4              |                              |          |            | 1              |
| Vale           | 1,976      |                  |                              |          |            |                | 0.375            |                              |          |            | 0              |
| Waldport       | 2,080      |                  |                              |          |            |                |                  |                              |          |            |                |
| Rogue River    | 2,145      |                  |                              |          |            |                |                  |                              |          |            | 2              |
| Union          | 2,240      |                  |                              |          |            |                |                  |                              |          |            |                |
| Vernonia       | 2,450      |                  |                              |          |            |                |                  |                              |          |            |                |
| Lakeview       | 2,490      |                  |                              |          |            |                | 4.5              |                              |          |            |                |

| City                            | Population | Raw              |                              |          |            |                | Treated          |                              |          |            |                |
|---------------------------------|------------|------------------|------------------------------|----------|------------|----------------|------------------|------------------------------|----------|------------|----------------|
|                                 |            | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) |
| Gervais                         | 2,520      |                  |                              |          |            |                | 2                |                              |          |            |                |
| Myrtle Point                    | 2525       |                  |                              |          |            |                | 3                |                              |          |            |                |
| Jacksonville                    | 2,840      |                  |                              |          |            |                |                  | 3.45                         |          |            |                |
| Estacada                        | 2,880      |                  |                              |          |            |                |                  |                              |          |            | 1.5            |
| Bandon                          | 3,100      |                  |                              |          |            | 1.1            | 3                |                              |          |            |                |
| Nyssa                           | 3,200      |                  |                              |          |            |                | 3.1              |                              |          |            |                |
| Mt. Angel                       | 3,300      | 1.3              |                              |          |            |                | N/A              |                              |          |            |                |
| Boardman                        | 3,405      |                  |                              |          |            |                |                  |                              |          |            |                |
| Toledo                          | 3,465      |                  |                              |          |            | 81             | 2.3              |                              |          |            |                |
| Aumsville                       | 3,750      |                  |                              |          |            |                |                  |                              |          |            |                |
| Coquille                        | 3,865      |                  |                              |          |            | 215            | 2.9              |                              |          |            |                |
| Wood Village                    | 3,875      |                  |                              |          |            |                | 1.43             |                              |          |            |                |
| Phoenix                         | 4,585      |                  |                              |          |            |                | 1.85             |                              |          |            |                |
| Philomath                       | 4,625      |                  |                              |          |            |                |                  |                              |          |            |                |
| Veneta                          | 4,635      |                  |                              |          |            |                | 3.5              |                              |          |            |                |
| <b>City Sizes 5,000 - 9,999</b> |            |                  |                              |          |            |                |                  |                              |          |            |                |
| Creswell                        | 5,031      |                  |                              |          |            |                | 4.2              |                              |          |            |                |
| Warrenton                       | 5,050      |                  |                              |          |            |                | 17               | 7.3                          |          |            |                |
| Sheridan                        | 6170       |                  |                              |          |            | 60             | 4                |                              |          |            |                |
| Talent                          | 6,170      |                  |                              |          |            |                |                  |                              |          |            |                |
| Madras                          | 6,255      |                  |                              |          |            |                |                  |                              |          |            |                |
| Sutherlin                       | 7,930      |                  |                              |          |            |                |                  |                              |          |            |                |

| City                              | Population | Raw              |                              |          |            |                | Treated          |                              |          |            |                |
|-----------------------------------|------------|------------------|------------------------------|----------|------------|----------------|------------------|------------------------------|----------|------------|----------------|
|                                   |            | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) |
| Molalla                           | 8,200      |                  |                              |          |            |                |                  |                              |          |            | 3.2            |
| Florence                          | 8,466      |                  |                              |          |            |                | 4.5              |                              |          |            |                |
| Eagle Point                       | 8,575      |                  |                              |          |            |                | 7.4              |                              |          |            |                |
| Independence                      | 8,585      |                  |                              |          |            |                |                  |                              |          |            |                |
| Sweet Home                        | 9,065      |                  |                              |          |            |                |                  |                              |          |            | 3              |
| Silverton                         | 9,330      |                  |                              |          |            | 420            | 4.45             |                              |          |            |                |
| Astoria                           | 9,500      |                  |                              |          |            |                |                  |                              |          |            |                |
| Cottage Grove                     | 9,785      |                  |                              |          |            |                |                  |                              |          |            | 4.3            |
| Sandy                             | 9,980      |                  |                              |          |            |                | 4.75             |                              |          |            |                |
| <b>City Sizes 10,000 - 24,999</b> |            |                  |                              |          |            |                |                  |                              |          |            |                |
| Gladstone                         | 11,495     |                  |                              |          |            |                |                  |                              |          |            |                |
| Cornelius                         | 12,161     |                  |                              |          |            |                | 1.5              |                              |          |            |                |
| St. Helens                        | 12,895     | 0.3              |                              |          |            |                | 5.7              |                              |          |            |                |
| The Dalles                        | 14,400     |                  |                              |          |            | 167            | 20               |                              |          |            |                |
| Dallas                            | 14,800     |                  |                              |          |            | 430            | 4                | 4                            | 50       |            |                |
| Lebanon                           | 15,660     |                  |                              |          |            |                | 6                |                              |          |            |                |
| Troutdale                         | 16,015     |                  |                              |          |            |                |                  |                              |          |            |                |
| Coos Bay                          | 16,160     |                  |                              |          |            |                |                  |                              |          |            |                |
| Pendleton                         | 16,600     |                  |                              |          |            |                | 1.8              | 5.43                         | 900      |            |                |
| Sherwood                          | 18,771     |                  |                              |          |            |                |                  |                              |          |            | 3              |
| Ashland                           | 20,295     |                  |                              |          |            | 1,047          | 7.1              |                              |          |            |                |



| City                              | Population | Raw              |                              |          |            |                | Treated          |                              |          |            |                |
|-----------------------------------|------------|------------------|------------------------------|----------|------------|----------------|------------------|------------------------------|----------|------------|----------------|
|                                   |            | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) | Closed Tank (MG) | Covered Urban Reservoir (MG) | ASR (MG) | Other (MG) | Reservoir (MG) |
| Milwaukie                         | 20,500     |                  |                              |          |            |                | 6                |                              |          |            |                |
| Klamath Falls                     | 21,200     |                  |                              |          |            |                | 21               |                              |          |            |                |
| Wilsonville                       | 21,550     |                  |                              |          |            |                | 8.67             |                              |          |            |                |
| Forest Grove                      | 22,000     |                  |                              |          |            |                |                  |                              |          |            |                |
| Roseburg                          | 22,275     |                  |                              |          | 0.7        |                | 11.4             |                              |          |            |                |
| Newberg                           | 22,396     |                  |                              |          |            |                | 12               |                              |          |            |                |
| <b>City Sizes 25,000 - 49,999</b> |            |                  |                              |          |            |                |                  |                              |          |            |                |
| West Linn                         | 25,425     | 1                | 2                            |          |            | 2              |                  |                              |          |            |                |
| Redmond                           | 26,590     |                  |                              |          |            |                | 10               |                              |          |            |                |
| Oregon City                       | 33,390     |                  |                              |          |            |                | 18.3             |                              |          |            |                |
| Grants Pass                       | 35,000     |                  |                              |          |            |                | 20.5             |                              |          |            |                |
| Lake Oswego                       | 36,990     |                  |                              |          |            |                |                  | 26                           |          |            |                |
| Tigard                            | 49,135     |                  |                              |          |            |                | 27               |                              | 500      |            |                |
| <b>City Sizes 50,000 or more</b>  |            |                  |                              |          |            |                |                  |                              |          |            |                |
| Albany                            | 50,720     |                  |                              |          |            |                |                  |                              |          |            | 20.6           |
| Springfield                       | 59,990     |                  |                              |          |            |                |                  |                              |          |            |                |
| Medford                           | 76,300     |                  |                              |          |            |                | 36.2             |                              |          |            |                |
| Bend                              | 81,000     |                  |                              |          |            |                | 30.35            |                              |          |            |                |
| Hillsboro                         | 81,310     |                  |                              |          |            | 3,300          | 18               | 31.9                         |          |            |                |
| Beaverton                         | 93,000     |                  |                              |          |            | 2,700          | 38.3             |                              | 450      |            |                |
| Salem                             | 157,888    |                  |                              |          |            |                | 47               | 98                           | 500      |            |                |
| Portland                          | 592,120    |                  |                              |          |            |                |                  |                              |          |            |                |



## APPENDIX D: WASTEWATER RATE STRUCTURE, PRICING, AND SYSTEM CHARACTERISTICS

Table D.1: Wastewater Rate Structure & Pricing

| City Size      | # of Responses | Last Year of Rate Change | Rate structure |                                                        |                                                |       | Average Cost per 5,000 gal. |
|----------------|----------------|--------------------------|----------------|--------------------------------------------------------|------------------------------------------------|-------|-----------------------------|
|                |                |                          | Flat Rate      | Winter average water consumption used in summer months | Winter average water consumption used all year | Other |                             |
| <1,000         | 23             | 2013                     | 18             | 1                                                      | 0                                              | 4     | \$42.86                     |
| 1,000-4,999    | 37             | 2013                     | 23             | 3                                                      | 2                                              | 10    | \$44.70                     |
| 5,000-9,999    | 13             | 2012                     | 4              | 5                                                      | 2                                              | 2     | \$43.94                     |
| 10,000-24,999  | 16             | 2014                     | 6              | 7                                                      | 2                                              | 1     | \$45.69                     |
| 25,000-49,999  | 6              | 2014                     | 3              | 1                                                      | 1                                              | 1     | \$39.62                     |
| 50,000 or more | 6              | 2014                     | 1              | 1                                                      | 3                                              | 1     | \$40.46                     |
| All cities     | 101            | 2013                     | 55             | 18                                                     | 10                                             | 19    | \$43.84                     |

| City             | Population | Last Year of Rate Change | Rate structure |                                                        |                                                |       | Average Cost per 5,000 gal. |
|------------------|------------|--------------------------|----------------|--------------------------------------------------------|------------------------------------------------|-------|-----------------------------|
|                  |            |                          | Flat Rate      | Winter average water consumption used in summer months | Winter average water consumption used all year | Other |                             |
| City size <1,000 |            |                          |                |                                                        |                                                |       |                             |
| Lonerock         | 34         |                          |                |                                                        |                                                |       |                             |
| Monument         | 130        | 2014                     | ✓              |                                                        |                                                |       | \$49.95                     |
| Idanha           | 135        |                          |                |                                                        |                                                |       |                             |
| Detroit          | 205        |                          |                |                                                        |                                                |       |                             |
| Sumpter          | 205        |                          |                |                                                        |                                                |       |                             |
| Waterloo         | 230        |                          |                |                                                        |                                                |       |                             |
| Ukiah            | 235        | 2011                     | ✓              |                                                        |                                                |       | \$27.00                     |
| Lexington        | 255        | 2014                     | ✓              |                                                        |                                                |       |                             |
| Westfir          | 255        |                          |                |                                                        |                                                |       | \$41.00                     |

| City          | Population | Last Year of Rate Change | Rate structure |                                                        |                                                |       | Average Cost per 5,000 gal. |
|---------------|------------|--------------------------|----------------|--------------------------------------------------------|------------------------------------------------|-------|-----------------------------|
|               |            |                          | Flat Rate      | Winter average water consumption used in summer months | Winter average water consumption used all year | Other |                             |
| Nehalem       | 280        |                          |                |                                                        |                                                |       |                             |
| Sodaville     | 310        |                          |                |                                                        |                                                |       |                             |
| Moro          | 325        | 2014                     | ✓              |                                                        |                                                |       |                             |
| Ione          | 330        |                          |                |                                                        |                                                |       |                             |
| Adams         | 350        |                          |                |                                                        |                                                |       |                             |
| Scotts Mills  | 364        |                          |                |                                                        |                                                |       |                             |
| Haines        | 415        |                          |                |                                                        |                                                |       |                             |
| St. Paul      | 416        | 2014                     | ✓              |                                                        |                                                |       | \$70.00                     |
| Mosier        | 433        | 2014                     | ✓              |                                                        |                                                |       | \$63.00                     |
| Rivergrove    | 445        |                          |                |                                                        |                                                |       |                             |
| Huntington    | 445        | 2014                     | ✓              |                                                        |                                                |       | \$35.50                     |
| Fossil        | 475        |                          |                |                                                        |                                                |       |                             |
| Gates         | 485        |                          |                |                                                        |                                                |       |                             |
| Mount Vernon  | 525        | 2014                     | ✓              |                                                        |                                                |       | \$35.00                     |
| Cove          | 550        | 2014                     | ✓              |                                                        |                                                |       | \$45.00                     |
| Manzanita     | 615        |                          |                |                                                        |                                                |       |                             |
| Arlington     | 619        | 2007                     | ✓              |                                                        |                                                |       | \$38.00                     |
| Weston        | 675        | 2013                     | ✓              |                                                        |                                                |       | \$57.50                     |
| Condon        | 685        | 2012                     | ✓              |                                                        |                                                |       | \$44.00                     |
| Powers        | 695        | 2013                     |                |                                                        |                                                | ✓     | \$47.00                     |
| Echo          | 705        | 2012                     |                |                                                        |                                                | ✓     | \$45.00                     |
| Yachats       | 800        | 2008                     |                |                                                        |                                                | ✓     | \$50.00                     |
| Malin         | 815        | 2013                     | ✓              |                                                        |                                                |       | \$15.00                     |
| Merrill       | 845        | 2010                     | ✓              |                                                        |                                                |       | \$35.00                     |
| Adair Village | 850        | 2014                     | ✓              |                                                        |                                                |       | \$46.06                     |
| Glendale      | 874        | 2013                     | ✓              |                                                        |                                                |       | \$48.00                     |
| Prairie City  | 910        |                          |                |                                                        |                                                |       |                             |
| Halsey        | 917        | 2014                     |                |                                                        |                                                | ✓     | \$32.00                     |
| Falls City    | 950        | 2013                     | ✓              |                                                        |                                                |       | \$46.00                     |
| Oakland       | 980        | 2014                     | ✓              |                                                        |                                                |       | N/A                         |
| Donald        | 980        | 2014                     |                | ✓                                                      |                                                |       | \$30.00                     |

| City                     | Population | Last Year of Rate Change | Rate structure |                                                        |                                                |       | Average Cost per 5,000 gal. |
|--------------------------|------------|--------------------------|----------------|--------------------------------------------------------|------------------------------------------------|-------|-----------------------------|
|                          |            |                          | Flat Rate      | Winter average water consumption used in summer months | Winter average water consumption used all year | Other |                             |
| City Sizes 1,000 - 4,999 |            |                          |                |                                                        |                                                |       |                             |
| Island City              | 1,015      |                          |                |                                                        |                                                |       |                             |
| Yamhill                  | 1,020      | > 10 yrs. ago            | ✓              |                                                        |                                                |       | \$51.68                     |
| Yoncalla                 | 1,060      | 2014                     | ✓              |                                                        |                                                |       | \$47.00                     |
| Joseph                   | 1,090      | 2014                     | ✓              |                                                        |                                                |       | \$21.25                     |
| Athena                   | 1,125      | 2010                     | ✓              |                                                        |                                                |       | \$42.00                     |
| Port Orford              | 1,135      | 2014                     | ✓              |                                                        |                                                |       | \$79.18                     |
| Riddle                   | 1,185      | 2012                     | ✓              |                                                        |                                                |       | \$90.00                     |
| Cascade Locks            | 1,200      | > 10 yrs. ago            |                |                                                        |                                                | ✓     | \$42.50                     |
| Gold Hill                | 1,220      | 2014                     | ✓              |                                                        |                                                |       |                             |
| Siletz                   | 1,290      | 2014                     |                |                                                        |                                                | ✓     | \$63.00                     |
| Heppner                  | 1,290      | 2013                     | ✓              |                                                        |                                                |       | \$29.10                     |
| Dunes City               | 1,310      |                          |                |                                                        |                                                |       |                             |
| Bay City                 | 1,310      | 2014                     | ✓              |                                                        |                                                |       | \$33.95                     |
| Rockaway Beach           | 1,325      | 2011                     | ✓              |                                                        |                                                |       | \$50.80‡                    |
| Culver                   | 1,370      | 2010                     | ✓              |                                                        |                                                |       | \$36.00                     |
| Depoe Bay                | 1,405      | 2014                     |                |                                                        |                                                | ✓     | \$28.00‡                    |
| Gearhart                 | 1,465      |                          |                |                                                        |                                                |       |                             |
| Hines                    | 1,565      | 2014                     |                |                                                        |                                                | ✓     | \$48.00‡                    |
| La Pine                  | 1,670      | 2010                     | ✓              |                                                        |                                                |       |                             |
| Brownsville              | 1,670      |                          |                |                                                        |                                                |       |                             |
| Lakeside                 | 1,705      |                          |                |                                                        |                                                |       |                             |
| Clatskanie               | 1,729      | 2011                     |                |                                                        |                                                | ✓     | \$41.50                     |
| John Day                 | 1,745      | 2014                     |                | ✓                                                      |                                                |       | \$39.50                     |
| Banks                    | 1,785      |                          |                |                                                        |                                                |       |                             |
| Irrigon                  | 1,835      | 2014                     | ✓              |                                                        |                                                |       | \$59.89                     |
| Columbia City            | 1,945      | 2014                     |                |                                                        |                                                | ✓     | \$41.21                     |
| Vale                     | 1,976      | 2014                     |                |                                                        | ✓                                              |       | \$40.60                     |
| Waldport                 | 2,080      |                          |                |                                                        |                                                |       |                             |
| Rogue River              | 2,145      | 2014                     |                |                                                        |                                                | ✓     | \$30.60                     |
| Union                    | 2,240      | 2014                     | ✓              |                                                        |                                                |       | \$41.63                     |

| City                            | Population | Last Year of Rate Change | Rate structure |                                                        |                                                |       | Average Cost per 5,000 gal. |
|---------------------------------|------------|--------------------------|----------------|--------------------------------------------------------|------------------------------------------------|-------|-----------------------------|
|                                 |            |                          | Flat Rate      | Winter average water consumption used in summer months | Winter average water consumption used all year | Other |                             |
| Vernonia                        | 2,450      | 2013                     | ✓              |                                                        |                                                |       | N/A                         |
| Lakeview                        | 2,490      | 2011                     | ✓              |                                                        |                                                |       | \$27.16                     |
| Gervais                         | 2,520      | > 10 yrs. ago            | ✓              |                                                        |                                                |       | \$37.00                     |
| Myrtle Point                    | 2,525      | 2013                     |                | ✓                                                      |                                                |       | \$38.24                     |
| Jacksonville                    | 2,840      |                          |                |                                                        |                                                |       |                             |
| Estacada                        | 2,880      | 2014                     | ✓              |                                                        |                                                |       | \$34.15                     |
| Bandon                          | 3,100      | 2011                     |                |                                                        |                                                | ✓     | \$32.36                     |
| Nyssa                           | 3,200      | 2010                     | ✓              |                                                        |                                                |       | \$48.00                     |
| Mt. Angel                       | 3,300      | 2009                     | ✓              |                                                        |                                                |       | \$37.50                     |
| Boardman                        | 3,405      |                          | ✓              |                                                        |                                                |       |                             |
| Toledo                          | 3,465      | 2014                     |                |                                                        | ✓                                              |       | \$71.45                     |
| Aumsville                       | 3,750      | 2013                     | ✓              |                                                        |                                                |       | \$38.62                     |
| Coquille                        | 3,865      | 2013                     |                | ✓                                                      |                                                |       | \$61.00                     |
| Wood Village                    | 3,875      | 2014                     |                |                                                        |                                                | ✓     | \$49.80                     |
| Phoenix                         | 4,585      |                          |                |                                                        |                                                |       |                             |
| Philomath                       | 4,625      | 2013                     |                |                                                        |                                                | ✓     | \$41.00                     |
| Veneta                          | 4,635      | 2013                     | ✓              |                                                        |                                                |       | \$46.26                     |
| <b>City Sizes 5,000 - 9,999</b> |            |                          |                |                                                        |                                                |       |                             |
| Creswell                        | 5,031      | 2006                     |                | ✓                                                      |                                                |       | \$43.03                     |
| Warrenton                       | 5,050      | 2014                     |                |                                                        |                                                | ✓     | \$48.66                     |
| Sheridan                        | 6,170      |                          |                |                                                        |                                                |       |                             |
| Talent                          | 6,170      | 2014                     | ✓              |                                                        |                                                |       | \$34.25                     |
| Madras                          | 6,255      | 2014                     |                |                                                        | ✓                                              |       | \$53.00                     |
| Sutherlin                       | 7,930      | 2014                     |                |                                                        |                                                | ✓     | \$34.10                     |
| Molalla                         | 8,200      | 2006                     |                | ✓                                                      |                                                |       | \$40.99                     |
| Florence                        | 8,466      | 2014                     | ✓              |                                                        |                                                |       | \$50.71                     |
| Eagle Point                     | 8,575      |                          |                |                                                        |                                                |       |                             |
| Independence                    | 8,585      | 2014                     | ✓              |                                                        |                                                |       | \$42.93                     |
| Sweet Home                      | 9,065      | 2014                     |                | ✓                                                      |                                                |       | \$49.60                     |
| Silverton                       | 9,330      | 2014                     |                |                                                        | ✓                                              |       | \$63.85                     |
| Astoria                         | 9,500      | 2013                     | ✓              |                                                        |                                                |       |                             |

| City                              | Population | Last Year of Rate Change | Rate structure |                                                        |                                                |       | Average Cost per 5,000 gal. |
|-----------------------------------|------------|--------------------------|----------------|--------------------------------------------------------|------------------------------------------------|-------|-----------------------------|
|                                   |            |                          | Flat Rate      | Winter average water consumption used in summer months | Winter average water consumption used all year | Other |                             |
| Cottage Grove                     | 9,785      | 2014                     |                | ✓                                                      |                                                |       | \$43.09                     |
| Sandy                             | 9,980      | 2008                     |                | ✓                                                      |                                                |       | \$23.05                     |
| <b>City Sizes 10,000 - 24,999</b> |            |                          |                |                                                        |                                                |       |                             |
| Gladstone                         | 11,495     | 2014                     | ✓              |                                                        |                                                |       | \$27.79                     |
| Cornelius                         | 12,161     | 2014                     |                |                                                        | ✓                                              |       | \$44.08                     |
| St. Helens                        | 12,895     | 2013                     |                | ✓                                                      |                                                |       | \$51.92†                    |
| The Dalles                        | 14,400     | 2014                     | ✓              |                                                        |                                                |       | \$44.78                     |
| Dallas                            | 14,800     | 2014                     | ✓              |                                                        |                                                |       | \$42.90                     |
| Lebanon                           | 15,660     | 2014                     |                |                                                        | ✓                                              |       | \$67.08                     |
| Troutdale                         | 16,015     | 2014                     | ✓              |                                                        |                                                |       |                             |
| Coos Bay                          | 16,160     | 2014                     |                | ✓                                                      |                                                |       | \$62.16                     |
| Pendleton                         | 16,600     | 2014                     | ✓              |                                                        |                                                |       | \$28.35                     |
| Sherwood                          | 18,771     | 2014                     |                | ✓                                                      |                                                |       | \$37.99                     |
| Ashland                           | 20,295     | 2014                     |                | ✓                                                      |                                                |       | \$49.76                     |
| Milwaukie                         | 20,500     | 2013                     |                | ✓                                                      |                                                |       | \$51.21                     |
| Klamath Falls                     | 21,200     | 2014                     |                | ✓                                                      |                                                |       | \$46.92                     |
| Wilsonville                       | 21,550     | 2014                     |                |                                                        |                                                | ✓     | \$55.24                     |
| Forest Grove                      | 22,000     | 2013                     | ✓              |                                                        |                                                |       | \$30.80                     |
| Roseburg                          | 22,275     |                          |                |                                                        |                                                |       |                             |
| Newberg                           | 22,396     | 2014                     |                | ✓                                                      |                                                |       | \$44.40                     |
| <b>City Sizes 25,000 - 49,999</b> |            |                          |                |                                                        |                                                |       |                             |
| West Linn                         | 25,425     | 2014                     | ✓              |                                                        |                                                |       | \$33.62                     |
| Redmond                           | 26,590     | 2014                     | ✓              |                                                        |                                                |       | \$29.81                     |
| Oregon City                       | 33,390     | 2013                     | ✓              |                                                        |                                                |       | \$45.66                     |
| Grants Pass                       | 35,000     | 2014                     |                |                                                        | ✓                                              |       | \$27.04                     |
| Lake Oswego                       | 36,990     | 2014                     |                | ✓                                                      |                                                |       | \$61.99                     |
| Tigard                            | 49,135     | 2014                     |                |                                                        |                                                | ✓     |                             |
| <b>City Sizes 50,000 or more</b>  |            |                          |                |                                                        |                                                |       |                             |
| Albany                            | 50,720     | 2014                     |                |                                                        | ✓                                              |       | \$51.88                     |
| Springfield                       | 59,990     | 2014                     |                | ✓                                                      |                                                |       | \$45.36                     |
| Medford                           | 76,300     | 2013                     |                |                                                        |                                                | ✓     | \$15.85                     |

| City      | Population | Last Year of Rate Change | Rate structure |                                                        |                                                |       | Average Cost per 5,000 gal. |
|-----------|------------|--------------------------|----------------|--------------------------------------------------------|------------------------------------------------|-------|-----------------------------|
|           |            |                          | Flat Rate      | Winter average water consumption used in summer months | Winter average water consumption used all year | Other |                             |
| Bend      | 81,000     | 2014                     | ✓              |                                                        |                                                |       | \$48.36                     |
| Hillsboro | 81,310     |                          |                |                                                        |                                                |       |                             |
| Beaverton | 93,000     | 2014                     |                |                                                        | ✓                                              |       |                             |
| Salem     | 157,888    | 2014                     |                |                                                        | ✓                                              |       | \$40.85                     |
| Portland  | 592,120    |                          |                |                                                        |                                                |       |                             |

‡Bi-monthly billing city where values adjusted for comparable comparison. See Data Editing and Analysis in Appendix A for explanation.



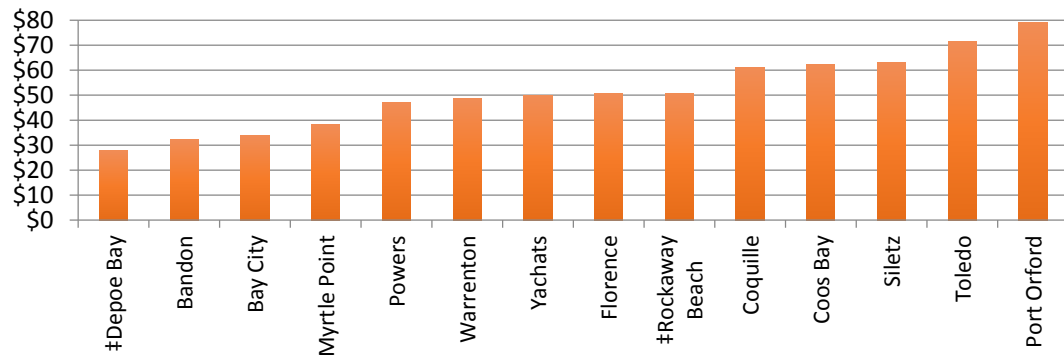
**Charts D.2A-C.2F: Wastewater Bill a Residential Customer Would Pay for 5,000 Gallons Using A ¾" Meter**

As mentioned in the report, please keep in mind that the values reported below are just values. Assumptions cannot be made that a utility is in the black or red. In other words, a lower value does not necessarily suggest a utility is meeting its maintenance and operating costs and generating enough revenue to fund capital investments. Similarly, a higher value does not necessarily suggest a city is generating more revenue than it needs.

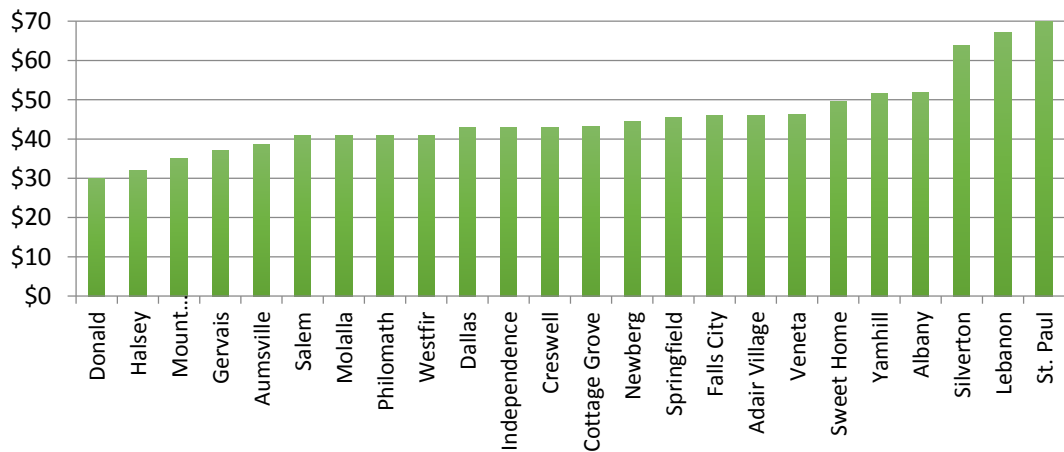
Although the survey asked cities to report the minimum value a customer would pay if the city could not bill for exactly 5,000 gallons, the bi-monthly billing cities have values adjusted to reflect a monthly rate for a more representative comparison. See Appendix A Data Editing and Analysis for more information on the adjustments. See footnotes to determine which cities were adjusted.

‡Indicates a city with bi-monthly billing and an adjusted bi-monthly reported value.

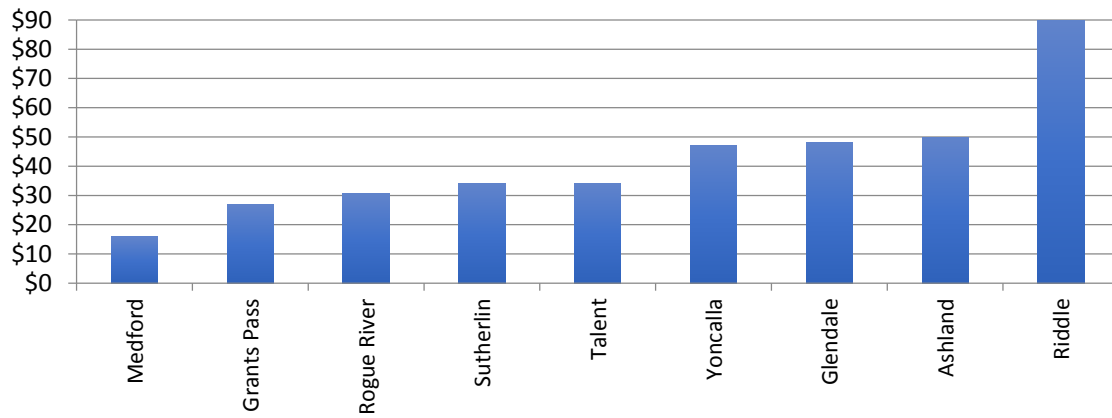
**Chart D.2A: Coastal Region Cities' Wastewater Bill for 5,000 gallons**



**Chart D.2B: Valley Region Cities' Wastewater Bill for 5,000 gallons**

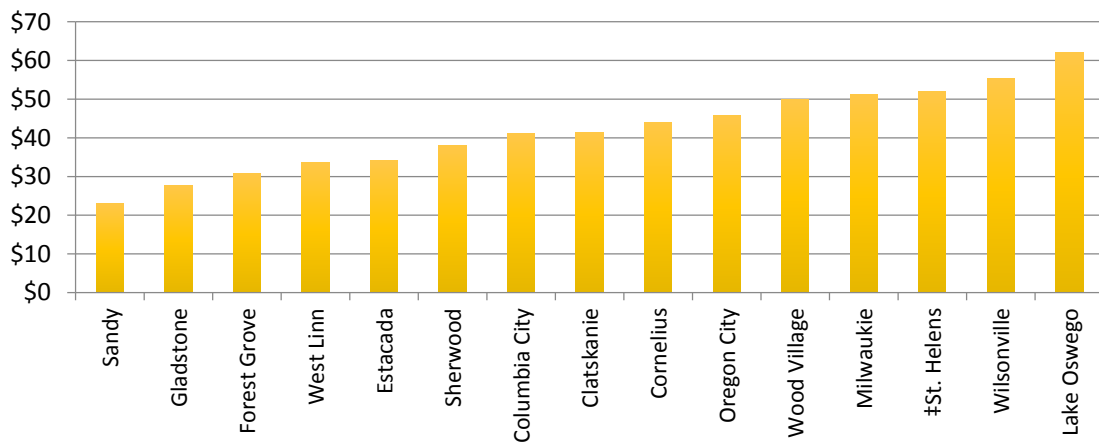


**Chart D.2C: Southern Region Cities' Wastewater Bill for 5,000 gallons**



One potential reason for Riddle's higher rates is that it recently increased its rates in 2012 for its completed 2014 upgrade to its facilities.

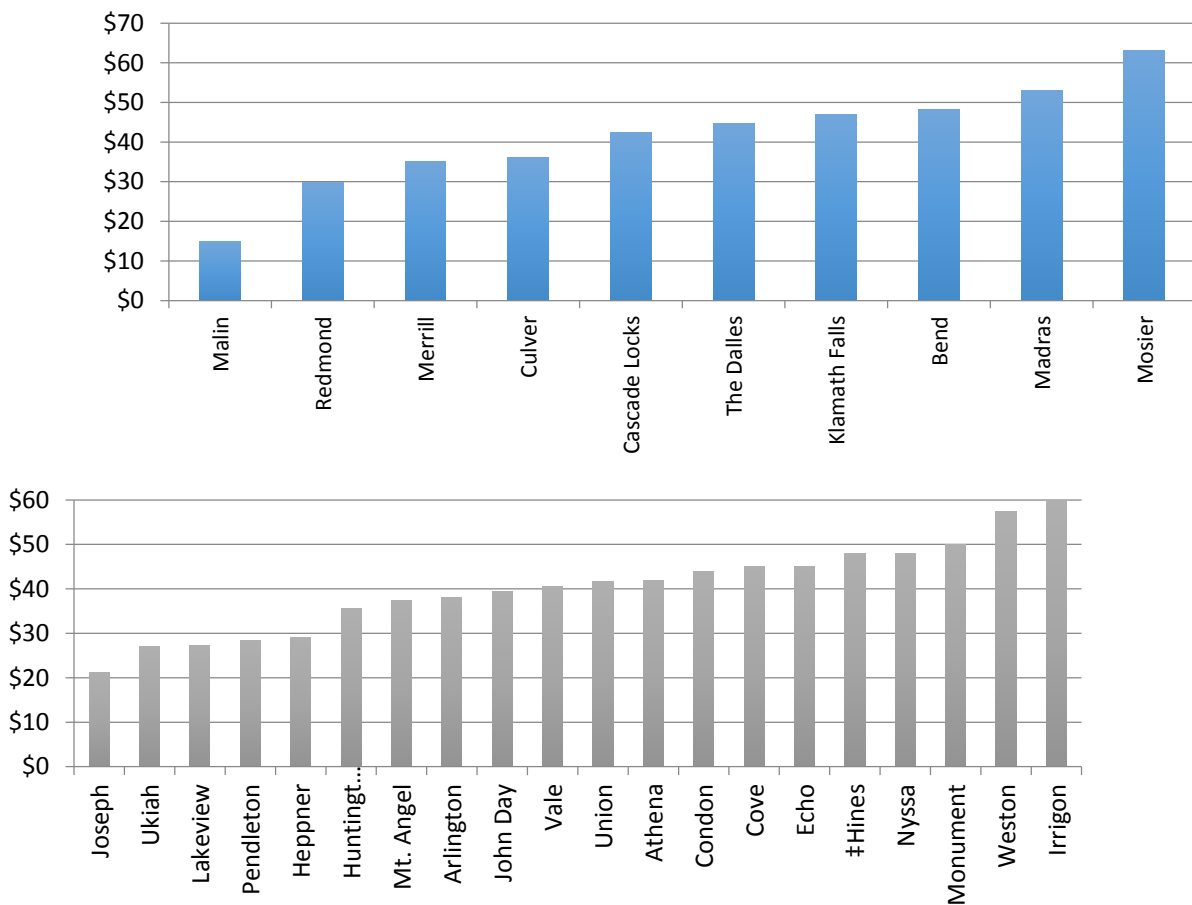
**Chart D.2D: Portland/Mt. Hood Region Cities' Wastewater Bill for 5,000 gallons**



**Chart D.2E: Central Region Cities' Wastewater Bill for 5,000 gallons**

The information available at this time limits an explanation for Malin's lower water bill.

**Chart D.2F: Eastern Region Cities' Wastewater Bill for 5,000 gallons**



**Table D.3: Wastewater System Characteristics**

| City Size      | Total Miles of<br>Sewer Lines<br>(not laterals) | # of Pump/Lift<br>Stations | # of<br>Treatment<br>Plants | Percent<br>"combined<br>sewer" |
|----------------|-------------------------------------------------|----------------------------|-----------------------------|--------------------------------|
| <1,000         | 6                                               | 2                          | 1                           | 21                             |
| 1,000-4,999    | 16                                              | 3                          | 1                           | 4                              |
| 5,000-9,999    | 33                                              | 8                          | 1                           | 0                              |
| 10,000-24,999  | 71                                              | 7                          | 1                           | 1                              |
| 25,000-49,999  | 163                                             | 10                         | 1                           | 0                              |
| 50,000 or more | 375                                             | 79                         | 1                           | 0                              |
| All cities     | 68                                              | 10                         | 1                           | 6                              |

| City                       | Population | Total Miles of<br>Sewer Lines<br>(not laterals) | # of Pump/Lift<br>Stations | # of<br>Treatment<br>Plants | Percent<br>"combined<br>sewer" |
|----------------------------|------------|-------------------------------------------------|----------------------------|-----------------------------|--------------------------------|
| <b>City size &lt;1,000</b> |            |                                                 |                            |                             |                                |
| Lonerock                   | 34         |                                                 |                            |                             |                                |
| Monument                   | 130        |                                                 | 5                          |                             |                                |
| Idanha                     | 135        | N/A                                             | N/A                        | N/A                         | N/A                            |
| Detroit                    | 205        |                                                 |                            |                             |                                |
| Sumpter                    | 205        |                                                 |                            |                             |                                |
| Waterloo                   | 230        | 0                                               | 0                          | 0                           | 0                              |
| Ukiah                      | 235        | Unknown                                         | 1                          | 1                           | 100                            |
| Lexington                  | 255        | N/A                                             | N/A                        | N/A                         | N/A                            |
| Westfir                    | 255        |                                                 |                            |                             |                                |
| Nehalem                    | 280        |                                                 |                            |                             |                                |
| Sodaville                  | 310        |                                                 |                            |                             |                                |
| Moro                       | 325        |                                                 |                            |                             |                                |
| Ione                       | 330        |                                                 |                            |                             |                                |
| Adams                      | 350        |                                                 |                            |                             |                                |
| Scotts Mills               | 364        |                                                 |                            |                             |                                |
| Haines                     | 415        | 5                                               | 1                          | 1                           | 0                              |
| St. Paul                   | 416        | 2                                               | 2                          | 1                           | 0                              |
| Mosier                     | 433        | 3                                               | 0                          | 1                           | 0                              |
| Rivergrove                 | 445        |                                                 |                            |                             |                                |
| Huntington                 | 445        |                                                 |                            |                             |                                |
| Fossil                     | 475        |                                                 |                            |                             |                                |

| City                            | Population | Total Miles of<br>Sewer Lines<br>(not laterals) | # of Pump/Lift<br>Stations | # of<br>Treatment<br>Plants | Percent<br>"combined<br>sewer" |
|---------------------------------|------------|-------------------------------------------------|----------------------------|-----------------------------|--------------------------------|
| Gates                           | 485        |                                                 |                            |                             |                                |
| Mount Vernon                    | 525        |                                                 |                            |                             |                                |
| Cove                            | 550        |                                                 |                            |                             |                                |
| Manzanita                       | 615        |                                                 |                            |                             |                                |
| Arlington                       | 619        | 9                                               | 2                          | 1                           | 0                              |
| Weston                          | 675        |                                                 |                            |                             |                                |
| Condon                          | 685        |                                                 |                            |                             |                                |
| Powers                          | 695        |                                                 |                            |                             |                                |
| Echo                            | 705        | 5                                               | 1                          |                             | 0                              |
| Yachats                         | 800        | 10                                              | 5                          | 1                           | 0                              |
| Malin                           | 815        | 6                                               | 1                          | 1                           | 5                              |
| Merrill                         | 845        | 5                                               | 3                          | 1                           | none                           |
| Adair Village                   | 850        | 14                                              | 2                          | 1                           | 0                              |
| Glendale                        | 874        | 5                                               | 2                          | 1                           | 66                             |
| Prairie City                    | 910        |                                                 |                            |                             |                                |
| Halsey                          | 917        | 4                                               | 3                          | 1                           | 0                              |
| Falls City                      | 950        |                                                 |                            |                             |                                |
| Oakland                         | 980        | 9                                               | 2                          | 1                           | 100                            |
| Donald                          | 980        |                                                 |                            |                             |                                |
| <b>City Sizes 1,000 - 4,999</b> |            |                                                 |                            |                             |                                |
| Island City                     | 1,015      | 10                                              | 6                          | 0                           | 0                              |
| Yamhill                         | 1,020      |                                                 |                            | 1                           |                                |
| Yoncalla                        | 1,060      | 20                                              | 1                          | 1                           | 0                              |
| Joseph                          | 1,090      |                                                 |                            |                             |                                |
| Athena                          | 1,125      | 7                                               | 1                          | 1                           | 0                              |
| Port Orford                     | 1,135      | 13                                              | 4                          | 1                           |                                |
| Riddle                          | 1,185      |                                                 |                            | 1                           |                                |
| Cascade Locks                   | 1,200      |                                                 |                            |                             |                                |
| Gold Hill                       | 1,220      |                                                 | 0                          | 1                           |                                |
| Siletz                          | 1,290      | 8                                               | 2                          | 1                           | 0                              |
| Heppner                         | 1,290      | Unknown                                         | 1                          | 1                           | 0                              |
| Dunes City                      | 1,310      | N/A                                             | N/A                        | N/A                         | N/A                            |
| Bay City                        | 1,310      |                                                 | 2                          | 1                           | 0                              |
| Rockaway Beach                  | 1,325      |                                                 |                            |                             |                                |

| City                            | Population | Total Miles of<br>Sewer Lines<br>(not laterals) | # of Pump/Lift<br>Stations | # of<br>Treatment<br>Plants | Percent<br>"combined<br>sewer" |
|---------------------------------|------------|-------------------------------------------------|----------------------------|-----------------------------|--------------------------------|
| Culver                          | 1,370      | 7                                               | 1                          | 1                           | 0                              |
| Depoe Bay                       | 1,405      |                                                 | 5                          | 1                           | 0                              |
| Gearhart                        | 1,465      |                                                 |                            |                             |                                |
| Hines                           | 1,565      | 13                                              | 2                          | 0                           | 0                              |
| La Pine                         | 1,670      | 21                                              | 5                          | 1                           | 0                              |
| Brownsville                     | 1,670      |                                                 |                            |                             |                                |
| Lakeside                        | 1,705      |                                                 |                            |                             |                                |
| Clatskanie                      | 1,729      | 10                                              | 5                          | 1                           | 0                              |
| John Day                        | 1,745      | 19                                              | 3                          | 1                           | 0                              |
| Banks                           | 1,785      |                                                 |                            |                             |                                |
| Irrigon                         | 1,835      | 30                                              | 3                          | 1                           | 0                              |
| Columbia City                   | 1,945      | 16                                              | 4                          | 0                           | 0                              |
| Vale                            | 1,976      |                                                 | 2                          | 1                           | 5                              |
| Waldport                        | 2,080      |                                                 |                            |                             |                                |
| Rogue River                     | 2,145      | 11                                              | 7                          | 1                           | 0                              |
| Union                           | 2,240      | 20                                              | 1                          | 1                           | 0                              |
| Vernonia                        | 2,450      |                                                 |                            |                             |                                |
| Lakeview                        | 2,490      |                                                 | 5                          | 1                           | 0                              |
| Gervais                         | 2,520      | 5.5 to 6                                        | 2                          | 3                           | 0                              |
| Myrtle Point                    | 2,525      | 14                                              | 3                          | 1                           | 0                              |
| Jacksonville                    | 2,840      |                                                 |                            |                             |                                |
| Estacada                        | 2,880      | 17                                              | 3                          | 1                           | 100                            |
| Bandon                          | 3,100      | 24                                              | 7                          | 1                           | 0                              |
| Nyssa                           | 3,200      | 19                                              | 4                          | 1                           | 0                              |
| Mt. Angel                       | 3,300      | 12                                              | 0                          | 1                           | 0                              |
| Boardman                        | 3,405      |                                                 |                            |                             |                                |
| Toledo                          | 3,465      | 30                                              | 5                          | 1                           | 1                              |
| Aumsville                       | 3,750      | 9                                               | 1                          | 1                           | 0                              |
| Coquille                        | 3,865      | 19                                              | 2                          | 1                           | 0                              |
| Wood Village                    | 3,875      | 8.1                                             | 3                          | 0                           | 0                              |
| Phoenix                         | 4,585      |                                                 |                            |                             |                                |
| Philomath                       | 4,625      |                                                 |                            |                             |                                |
| Veneta                          | 4,635      | 23                                              | 3                          | 1                           | 0                              |
| <b>City Sizes 5,000 - 9,999</b> |            |                                                 |                            |                             |                                |

| City                              | Population | Total Miles of<br>Sewer Lines<br>(not laterals) | # of Pump/Lift<br>Stations | # of<br>Treatment<br>Plants | Percent<br>"combined<br>sewer" |
|-----------------------------------|------------|-------------------------------------------------|----------------------------|-----------------------------|--------------------------------|
| Creswell                          | 5,031      | 22                                              | 2                          | 1                           | 0                              |
| Warrenton                         | 5,050      |                                                 |                            |                             |                                |
| Sheridan                          | 6,170      | 18                                              | 2                          | 1                           | 0                              |
| Talent                            | 6,170      |                                                 |                            |                             |                                |
| Madras                            | 6,255      |                                                 |                            |                             |                                |
| Sutherlin                         | 7,930      | 27                                              | 5                          | 1                           | 0                              |
| Molalla                           | 8,200      | 33                                              | 6                          | 1                           | 0                              |
| Florence                          | 8,466      | 48                                              | 38                         | 1                           | 0                              |
| Eagle Point                       | 8,575      |                                                 |                            |                             |                                |
| Independence                      | 8,585      |                                                 |                            |                             |                                |
| Sweet Home                        | 9,065      | 64                                              | 0                          | 1                           | 0                              |
| Silverton                         | 9,330      | 25                                              | 7                          | 1                           | 0                              |
| Astoria                           | 9,500      |                                                 |                            | 1                           |                                |
| Cottage Grove                     | 9,785      | 46                                              | 4                          | 1                           | 0                              |
| Sandy                             | 9,980      | 19                                              | 6                          | 1                           | 0                              |
| <b>City Sizes 10,000 - 24,999</b> |            |                                                 |                            |                             |                                |
| Gladstone                         | 11,495     |                                                 |                            |                             |                                |
| Cornelius                         | 12,161     | 24                                              | 2                          | 0                           | 0                              |
| St. Helens                        | 12,895     | 58                                              | 9                          | 1                           | 0                              |
| The Dalles                        | 14,400     | 94                                              | 8                          | 1                           | Unknown                        |
| Dallas                            | 14,800     | 49                                              | 2                          | 1                           | <1                             |
| Lebanon                           | 15,660     | 51                                              | 3                          | 1                           | <1                             |
| Troutdale                         | 16,015     |                                                 |                            |                             |                                |
| Coos Bay                          | 16,160     | 90                                              | 23                         | 2                           | 0                              |
| Pendleton                         | 16,600     | 82                                              | 6                          | 1                           | 0                              |
| Sherwood                          | 18,771     | 63                                              | 0                          |                             | 0                              |
| Ashland                           | 20,295     | 110                                             | 6                          | 1                           | 0                              |
| Milwaukie                         | 20,500     | 75                                              | 5                          |                             | 0                              |
| Klamath Falls                     | 21,200     |                                                 |                            |                             |                                |
| Wilsonville                       | 21,550     | 76                                              | 8                          | 1                           | 8                              |
| Forest Grove                      | 22,000     |                                                 |                            |                             |                                |
| Roseburg                          | 22,275     |                                                 |                            |                             |                                |
| Newberg                           | 22,396     | 84                                              | 8                          | 1                           | 0                              |
| <b>City Sizes 25,000 - 49,999</b> |            |                                                 |                            |                             |                                |



| City                             | Population | Total Miles of<br>Sewer Lines<br>(not laterals) | # of Pump/Lift<br>Stations | # of<br>Treatment<br>Plants | Percent<br>"combined<br>sewer" |
|----------------------------------|------------|-------------------------------------------------|----------------------------|-----------------------------|--------------------------------|
| West Linn                        | 25,425     | 193                                             | 4                          | 0                           | 0                              |
| Redmond                          | 26,590     | 135                                             | 13                         | 1                           | <1                             |
| Oregon City                      | 33,390     | 130                                             | 14                         | 1                           | <1                             |
| Grants Pass                      | 35,000     | 170                                             | 3                          | 1                           | 0                              |
| Lake Oswego                      | 36,990     | 189                                             | 14                         | 0                           | 0                              |
| Tigard                           | 49,135     |                                                 |                            |                             |                                |
| <b>City Sizes 50,000 or more</b> |            |                                                 |                            |                             |                                |
| Albany                           | 50,720     | 222                                             | 16                         | 1                           | 0                              |
| Springfield                      | 59,990     | 240                                             | 13                         | 1                           | 0                              |
| Medford                          | 76,300     | 261                                             | 5                          | 1                           | 0                              |
| Bend                             | 81,000     | 446                                             | 414                        | 1                           | 0                              |
| Hillsboro                        | 81,310     |                                                 |                            |                             |                                |
| Beaverton                        | 93,000     | 280                                             | 0                          | 2                           | 0                              |
| Salem                            | 157,888    | 800                                             | 28                         | 2                           | 0                              |
| Portland                         | 592,120    |                                                 |                            |                             |                                |

**Table D.4: Wastewater System Production & Capacity**

| City Size      | Avg. Year of Original Plant Construction | Avg. Year of Last Major Upgrade | Total Amount of Wastewater Treated in 2013 (MG) | 2013 Peak Flow    |                   | Design Capacity of Plants    |                         | Current Operating Capacity (percent) | Projected Year of Max. Capacity |
|----------------|------------------------------------------|---------------------------------|-------------------------------------------------|-------------------|-------------------|------------------------------|-------------------------|--------------------------------------|---------------------------------|
|                |                                          |                                 |                                                 | Wet Weather (MGD) | Dry Weather (MGD) | Total Peak Wet Weather (MGD) | Total Dry Weather (MGD) |                                      |                                 |
| <1,000         | 1980                                     | 2006                            | 33                                              | 2                 | 1                 | 9                            | 9                       | 58                                   | 2029                            |
| 1,000-4,999    | 1979                                     | 2001                            | 89                                              | 1                 | 1                 | 17                           | 15                      | 57                                   | 2032                            |
| 5,000-9,999    | 1968                                     | 1996                            | 387                                             | 4                 | 2                 | 6                            | 2                       | 62                                   | 2029                            |
| 10,000-24,999  | 1965                                     | 2005                            | 1,107                                           | 11                | 5                 | 14                           | 5                       | 66                                   | 2026                            |
| 25,000-49,999  | 1977                                     | 2008                            | 909                                             | 9                 | 3                 | 12                           | 5                       | 75                                   | 2020                            |
| 50,000 or more | 1981                                     | 2010                            | 6,366                                           | 49                | 21                | 145                          | 22                      | 74                                   | 2021                            |
| All cities     | 1976                                     | 2003                            | 825                                             | 7                 | 3                 | 22                           | 11                      | 61                                   | 2029                            |

| City             | Population | Avg. Year of Original Plant Construction | Avg. Year of Last Major Upgrade | Total Amount of Wastewater Treated in 2013 (MG) | 2013 Peak Flow    |                   | Design Capacity Plants       |                         | Current Operating Capacity (percent) | Projected Year of Max. Capacity |
|------------------|------------|------------------------------------------|---------------------------------|-------------------------------------------------|-------------------|-------------------|------------------------------|-------------------------|--------------------------------------|---------------------------------|
|                  |            |                                          |                                 |                                                 | Wet Weather (MGD) | Dry Weather (MGD) | Total Peak Wet Weather (MGD) | Total Dry Weather (MGD) |                                      |                                 |
| City Size <1,000 |            |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Lonerock         | 34         |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Monument         | 130        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Idanha           | 135        | N/A                                      | N/A                             | N/A                                             | N/A               | N/A               | N/A                          | N/A                     | N/A                                  | N/A                             |
| Detroit          | 205        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Sumpter          | 205        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Waterloo         | 230        | N/A                                      | N/A                             | 0                                               | 0                 | 0                 | 0                            | 0                       | 0                                    | N/A                             |
| Ukiah            | 235        | 1979                                     | 2013                            | Unknown                                         | Unknown           | Unknown           | Unknown                      | Unknown                 | 100                                  | 2050                            |

| City         | Population | Avg. Year of Original Plant Construction | Avg. Year of Last Major Upgrade | Total Amount of Wastewater Treated in 2013 (MG) | 2013 Peak Flow    |                   | Design Capacity Plants       |                         | Current Operating Capacity (percent) | Projected Year of Max. Capacity |
|--------------|------------|------------------------------------------|---------------------------------|-------------------------------------------------|-------------------|-------------------|------------------------------|-------------------------|--------------------------------------|---------------------------------|
|              |            |                                          |                                 |                                                 | Wet Weather (MGD) | Dry Weather (MGD) | Total Peak Wet Weather (MGD) | Total Dry Weather (MGD) |                                      |                                 |
| Lexington    | 255        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Westfir      | 255        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Nehalem      | 280        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Sodaville    | 310        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Moro         | 325        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Ione         | 330        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Adams        | 350        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Scotts Mills | 364        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Haines       | 415        | 1980                                     | 2012                            | 30                                              | 0.12              | 0.09              | 17.3                         | 17.3                    | 65                                   |                                 |
| St. Paul     | 416        | 1979                                     | 2014                            | 15                                              | 0.15              | 0.08              | 1.5                          | 0.07                    | 75                                   | 2018                            |
| Mosier       | 433        | 2009                                     | 2009                            | Unknown                                         | Unknown           | Unknown           | 0.09                         | N/A                     | 50                                   | 2031                            |
| Rivergrove   | 445        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Huntington   | 445        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Fossil       | 475        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Gates        | 485        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Mount Vernon | 525        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Cove         | 550        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Manzanita    | 615        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Arlington    | 619        | 1964                                     | 2006                            | 75                                              |                   |                   | 75*                          | 75*                     | 75                                   | 2020                            |
| Weston       | 675        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Condon       | 685        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Powers       | 695        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Echo         | 705        | 1976                                     | 1985                            | 15                                              | 0.75              | 0.20              | 0.12                         | 0.12                    | 34                                   | Unknown                         |

| City                            | Population | Avg. Year of Original Plant Construction | Avg. Year of Last Major Upgrade | Total Amount of Wastewater Treated in 2013 (MG) | 2013 Peak Flow    |                   | Design Capacity Plants       |                         | Current Operating Capacity (percent) | Projected Year of Max. Capacity |
|---------------------------------|------------|------------------------------------------|---------------------------------|-------------------------------------------------|-------------------|-------------------|------------------------------|-------------------------|--------------------------------------|---------------------------------|
|                                 |            |                                          |                                 |                                                 | Wet Weather (MGD) | Dry Weather (MGD) | Total Peak Wet Weather (MGD) | Total Dry Weather (MGD) |                                      |                                 |
| Yachats                         | 800        | 2009                                     | 2009                            | 54                                              | 0.50              | 0.25              | 1.3                          | 0.25                    | 50                                   | 2043                            |
| Malin                           | 815        | 1931                                     | 2010                            | 20                                              | 0.10              | 0.07              | 0.14                         | 0.14                    | 70                                   | Unknown                         |
| Merrill                         | 845        | 2004                                     |                                 | 22                                              | 0.11              | 0.08              | 0.12                         | 0.12                    |                                      |                                 |
| Adair Village                   | 850        | 1958                                     | 1999                            | 35                                              | 8.1               | 1.9               | 0.34                         | 0.34                    | 90                                   | 2014                            |
| Glendale                        | 874        | 1978                                     | Current                         | 45                                              | 0.0               | 0.31              | 0.45                         | 0.17                    | 33                                   | 2044                            |
| Prairie City                    | 910        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Halsey                          | 917        | 1969                                     | 2009                            | 23                                              | 3.6               | 0.98              | 22.9                         |                         |                                      |                                 |
| Falls City                      | 950        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Oakland                         | 980        | 2002                                     | 2002                            | 60                                              | 5.0               | 2.0               | 0.72                         | 0.27                    |                                      | Unknown                         |
| Donald                          | 980        |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| <b>City Sizes 1,000 - 4,999</b> |            |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Island City                     | 1,015      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Yamhill                         | 1,020      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Yoncalla                        | 1,060      | 1968                                     | 1988                            | 4.6                                             | 0.81              | 0.13              | 0.14                         | 0.28                    | 50                                   | 2025                            |
| Joseph                          | 1,090      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Athena                          | 1,125      | 1953                                     | 2013                            | 21                                              | 0.09              | 0.05              | 0.31                         | 0.31                    | 40                                   |                                 |
| Port Orford                     | 1,135      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Riddle                          | 1,185      |                                          | 2014                            |                                                 |                   |                   |                              |                         |                                      |                                 |
| Cascade Locks                   | 1,200      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Gold Hill                       | 1,220      |                                          |                                 |                                                 | 0.09              | 0.06              | 0.3                          | 0.30                    | 35                                   |                                 |
| Siletz                          | 1,290      | 1973                                     | 1991                            |                                                 | 1.8               | 0.1               | 0.5                          | 0.24                    | 75                                   |                                 |
| Heppner                         | 1,290      | 1953                                     | 1994                            | 6.9                                             | 0.31              | 0.11              | 0.13                         | 0.13                    | ~75                                  | 2020                            |

| City           | Population | Avg. Year of Original Plant Construction | Avg. Year of Last Major Upgrade | Total Amount of Wastewater Treated in 2013 (MG) | 2013 Peak Flow    |                   | Design Capacity Plants       |                         | Current Operating Capacity (percent) | Projected Year of Max. Capacity |
|----------------|------------|------------------------------------------|---------------------------------|-------------------------------------------------|-------------------|-------------------|------------------------------|-------------------------|--------------------------------------|---------------------------------|
|                |            |                                          |                                 |                                                 | Wet Weather (MGD) | Dry Weather (MGD) | Total Peak Wet Weather (MGD) | Total Dry Weather (MGD) |                                      |                                 |
| Dunes City     | 1,310      | N/A                                      | N/A                             | N/A                                             | N/A               | N/A               | N/A                          | N/A                     | N/A                                  | N/A                             |
| Bay City       | 1,310      | 1995                                     | 2012                            | 104                                             | 1.1               | 1.3               | 1.4                          | 0.17                    | 90                                   | 2078                            |
| Rockaway Beach | 1,325      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Culver         | 1,370      | 1975                                     | 2012                            |                                                 |                   |                   |                              |                         | 30                                   | 2032                            |
| Depoe Bay      | 1,405      | 1974                                     | 2003                            | 169                                             | 1.1               | 0.51              | 1.6                          | 1.6                     | 60                                   |                                 |
| Gearhart       | 1,465      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Hines          | 1,565      | N/A                                      | N/A                             | 0.0                                             | Lagoon            | Lagoon            | N/A                          | N/A                     | Lagoon                               | Lagoon                          |
| La Pine        | 1,670      | 1989                                     | 2006                            | 40                                              | 0.14              | 0.09              | 0.25                         | 0.25                    | 50                                   | 2030                            |
| Brownsville    | 1,670      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Lakeside       | 1,705      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Clatskanie     | 1,729      | 1979                                     | 2014                            | 89                                              | 1.3               | 0.12              | 2.0                          | 0.15                    | 75                                   | 2020                            |
| John Day       | 1,745      | 1949                                     | 1979                            |                                                 |                   |                   | 0.6                          | 0.6                     | 40                                   | Unforeseen                      |
| Banks          | 1,785      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Irrigon        | 1,835      | 2004                                     | N/A                             | 32                                              | N/A               | 0.18              | 0.45                         | 0.45                    | 40                                   | 2025                            |
| Columbia City  | 1,945      |                                          |                                 | 39                                              | N/A               | N/A               |                              |                         | N/A                                  | N/A                             |
| Vale           | 1,976      | 2005                                     | 2005                            | 73                                              |                   |                   | 0.425                        | 0.425                   | 35                                   |                                 |
| Waldport       | 2,080      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Rogue River    | 2,145      | 1997                                     | 2000                            | 109                                             | 0.48              | 0.4               | 0.6                          | 0.48                    | 50                                   | 2037                            |
| Union          | 2,240      | 1977                                     | 2000                            | 56                                              | 0.24              | 0.17              | 365*                         | 365*                    | 50                                   | 2040                            |
| Vernonia       | 2,450      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Lakeview       | 2,490      | Unknown                                  | 2001                            |                                                 |                   |                   | Unknown                      | Unknown                 | 50                                   | 2030                            |
| Gervais        | 2,520      |                                          | 2003                            | 61                                              | 7.38              | 3.79              | 0.46                         | 0.22                    |                                      |                                 |
| Myrtle Point   | 2,525      | 1953                                     | 1971                            | 92                                              | 1.31              | 0.66              | 1.07                         | 0.36                    | 100                                  | 2013                            |

| City                            | Population | Avg. Year of Original Plant Construction | Avg. Year of Last Major Upgrade | Total Amount of Wastewater Treated in 2013 (MG) | 2013 Peak Flow    |                   | Design Capacity Plants       |                         | Current Operating Capacity (percent) | Projected Year of Max. Capacity |
|---------------------------------|------------|------------------------------------------|---------------------------------|-------------------------------------------------|-------------------|-------------------|------------------------------|-------------------------|--------------------------------------|---------------------------------|
|                                 |            |                                          |                                 |                                                 | Wet Weather (MGD) | Dry Weather (MGD) | Total Peak Wet Weather (MGD) | Total Dry Weather (MGD) |                                      |                                 |
| Jacksonville                    | 2,840      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Estacada                        | 2,880      | 1973                                     | 2009                            | 140                                             | 1.9               | 1.2               | 5.0                          | 0.54                    | 50                                   | Unknown                         |
| Bandon                          | 3,100      | 1971                                     | 2014                            | 119                                             | 0.35              | 0.35              | 3.2                          | 0.5                     | 69                                   | 2029                            |
| Nyssa                           | 3,200      | 2009                                     | 2009                            | 74                                              | 0.29              | 0.15              | 1.46                         | 0.42                    | 50                                   | 2030                            |
| Mt. Angel                       | 3,300      | 1992                                     | 2007                            | 93                                              | 1.19              | 0.90              | 2.69                         | 0.42                    | 44                                   | Unknown                         |
| Boardman                        | 3,405      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Toledo                          | 3,465      | 1954                                     | 2000                            | 240                                             | 1.3               | 0.66              | 6.5                          | 6.5                     | 75                                   | 2030                            |
| Aumsville                       | 3,750      | 1960                                     | 1985                            | 70.8                                            | 1.5               | 0.33              | 1.2                          | 0.30                    | 90                                   | 2020                            |
| Coquille                        | 3,865      | 2012                                     | N/A                             | 240                                             | 5.1               | 0.44              | 3.3                          | 0.53                    | 40                                   | 2060                            |
| Wood Village                    | 3,875      |                                          |                                 | 124                                             | 2.5               | 0.36              | Unknown                      | 0.50                    | 80                                   | 2040                            |
| Phoenix                         | 4,585      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Philomath                       | 4,625      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Veneta                          | 4,635      | 2002                                     | 2002                            | 149                                             | 1.14              | 0.40              | 2.4                          | 1.25                    | 50-60percent                         | 2025                            |
| <b>City Sizes 5,000 - 9,999</b> |            |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Creswell                        | 5,031      |                                          | 2007                            |                                                 |                   |                   |                              |                         |                                      |                                 |
| Warrenton                       | 5,050      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Sheridan                        | 6,170      | 1959                                     | 1988                            |                                                 |                   |                   |                              |                         |                                      |                                 |
| Talent                          | 6,170      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Madras                          | 6,255      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Sutherlin                       | 7,930      | 1977                                     | 1977                            | 263                                             | 2.5               | 0.20              | 4.9                          | 1.3                     | 100                                  | 2014                            |
| Molalla                         | 8,200      | 1977                                     | 2006                            | 434                                             | 3.8               | 2.2               | 3.0                          | 1.4                     | 54                                   | 2025                            |
| Florence                        | 8,466      | 1960                                     | 2000                            | 255                                             | 1.2               | 0.9               | 6.0                          | 1.3                     | 40                                   | 2030                            |

| City                              | Population | Avg. Year of Original Plant Construction | Avg. Year of Last Major Upgrade | Total Amount of Wastewater Treated in 2013 (MG) | 2013 Peak Flow    |                   | Design Capacity Plants       |                         | Current Operating Capacity (percent) | Projected Year of Max. Capacity |
|-----------------------------------|------------|------------------------------------------|---------------------------------|-------------------------------------------------|-------------------|-------------------|------------------------------|-------------------------|--------------------------------------|---------------------------------|
|                                   |            |                                          |                                 |                                                 | Wet Weather (MGD) | Dry Weather (MGD) | Total Peak Wet Weather (MGD) | Total Dry Weather (MGD) |                                      |                                 |
| Eagle Point                       | 8,575      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Independence                      | 8,585      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Sweet Home                        | 9,065      | 1961                                     | 1980                            | 426                                             | 7.5               | 1.5               | 5.0                          | 1.5                     | 70                                   | 2050                            |
| Silverton                         | 9,330      | 1962                                     | 1999                            | 356                                             | 5.7               | 1.4               | 12                           | 2.5                     | 40                                   | 2030                            |
| Astoria                           | 9,500      |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Cottage Grove                     | 9,785      | 1952                                     | 2004                            | 553                                             | 4.8               | 5.2               | 8.3                          | 1.8                     | 70-80                                | 2025                            |
| Sandy                             | 9,980      | 1998                                     | 2003                            | 419                                             | 3.6               | 1.0               | 4.0                          | 1.9                     | 65                                   | Unknown                         |
| <b>City Sizes 10,000 - 24,999</b> |            |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Gladstone                         | 11,495     |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Cornelius                         | 12,161     | N/A                                      | N/A                             | N/A                                             | N/A               | N/A               | N/A                          | N/A                     | N/A                                  | N/A                             |
| St. Helens                        | 12,895     | 1959                                     | 1991                            | 1,466                                           | 11.0              | 14.6              | 32                           | 6.4                     | 50                                   | Unknown                         |
| The Dalles                        | 14,400     | 1960                                     | 2005                            | 710                                             | 3.2               | 2.5               | 4.2                          | 4.15                    | 68.5                                 | 2014                            |
| Dallas                            | 14,800     | 1978                                     | 2000                            |                                                 | 12                | 2.0               | 15                           | 5.0                     | 40                                   | 2050                            |
| Lebanon                           | 15,660     | 1977                                     | 2012                            | 1,795                                           | 17                | 5.7               | 21                           | 3.0                     | 70                                   | 2024                            |
| Troutdale                         | 16,015     |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Coos Bay                          | 16,160     | 1959                                     | 1991                            | 1,124                                           | 9                 | 3.0               | 6.4                          | 4.9                     | 95                                   | 2021                            |
| Pendleton                         | 16,600     | 1953                                     | 2012                            | 850                                             | 2.9               | 2.5               | 3.3                          | 3.2                     | 65                                   | >2030                           |
| Sherwood                          | 18,771     | N/A                                      | N/A                             | N/A                                             | N/A               | N/A               | N/A                          | N/A                     | N/A                                  | N/A                             |
| Ashland                           | 20,295     | 1936                                     | 2002                            | 738                                             | 3.5               | 2.3               | 8.5                          | 3.3                     | 70                                   | 2015                            |
| Milwaukie                         | 20,500     | 1973                                     |                                 |                                                 | 18                |                   | 20                           | 10                      | 70                                   |                                 |
| Klamath Falls                     | 21,200     |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Wilsonville                       | 21,550     | 1971                                     | 2014                            | 770                                             | 10.6              | 6.2               | 10.6                         | 4.0                     | 50                                   | 2034                            |

| City                              | Population | Avg. Year of Original Plant Construction | Avg. Year of Last Major Upgrade | Total Amount of Wastewater Treated in 2013 (MG) | 2013 Peak Flow    |                   | Design Capacity Plants       |                         | Current Operating Capacity (percent) | Projected Year of Max. Capacity |
|-----------------------------------|------------|------------------------------------------|---------------------------------|-------------------------------------------------|-------------------|-------------------|------------------------------|-------------------------|--------------------------------------|---------------------------------|
|                                   |            |                                          |                                 |                                                 | Wet Weather (MGD) | Dry Weather (MGD) | Total Peak Wet Weather (MGD) | Total Dry Weather (MGD) |                                      |                                 |
| Forest Grove                      | 22,000     |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Roseburg                          | 22,275     |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Newberg                           | 22,396     | 1987                                     | 2014                            | 1,400                                           | 20                | 5.0               | 18                           | 8.0                     | 80                                   | 2025                            |
| <b>City Sizes 25,000 - 49,999</b> |            |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| West Linn                         | 25,425     | N/A                                      | N/A                             | 5.0                                             | 3.5               | 1.5               | N/A                          | N/A                     | 80                                   | 2025                            |
| Redmond                           | 26,590     | 1976                                     | 2008                            | 598                                             | 2.2               | 1.8               | 3.0                          | 3.0                     | 50                                   | 2020                            |
| Oregon City                       | 33,390     | 1982                                     | 2010                            |                                                 |                   |                   |                              |                         |                                      |                                 |
| Grants Pass                       | 35,000     | 1974                                     | 2007                            | 2,125                                           | 21.3              | 5.6               | 21.7                         | 6.2                     | 95                                   | 2016                            |
| Lake Oswego                       | 36,990     |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Tigard                            | 49,135     |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| <b>City Sizes 50,000 or more</b>  |            |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Albany                            | 50,720     | 2009                                     |                                 | 2,296                                           | 13.5              | 16.1              | 63                           | 9.6                     | 50                                   | 2030                            |
| Springfield                       | 59,990     | 1984                                     | 2008                            | 9,800                                           | 80.1              | 23.5              | 277                          | 34                      |                                      |                                 |
| Medford                           | 76,300     | 1969                                     | 2013                            | 5,867                                           | 22.8              | 22.8              | 85                           | 20                      | 85                                   | 2020                            |
| Bend                              | 81,000     | 1980                                     | Underway                        | 2,070                                           |                   |                   |                              | 12                      | ~100                                 | 2014                            |
| Hillsboro                         | 81,310     |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |
| Beaverton                         | 93,000     | N/A                                      | N/A                             | N/A                                             | N/A               | N/A               | N/A                          | N/A                     | N/A                                  | N/A                             |
| Salem                             | 157,888    | 1964                                     | 2009                            | 11,800                                          | 79.4              |                   | 155                          | 35                      | 86                                   | Unknown                         |
| Portland                          | 592,120    |                                          |                                 |                                                 |                   |                   |                              |                         |                                      |                                 |

\*Values flagged for review, but city unable to confirm value.



**Table D.5: Wastewater Programs**

| City Size      | Industrial Wastewater Pretreatment Program | Reclaimed Water | Percent of Total Reclaimed Water Reused/ Applied | Ownership & Use of Applied Property | Biosolids Application | Percent of Biosolids Applied | Ownership & Use of Applied Property |
|----------------|--------------------------------------------|-----------------|--------------------------------------------------|-------------------------------------|-----------------------|------------------------------|-------------------------------------|
| <1,000         | 18                                         | 19              | 64                                               | -                                   | 20                    | 88                           | -                                   |
| 1,000-4,999    | 35                                         | 35              | 65                                               | -                                   | 33                    | 82                           | -                                   |
| 5,000-9,999    | 9                                          | 9               | 46                                               | -                                   | 8                     | 85                           | -                                   |
| 10,000-24,999  | 12                                         | 11              | 10                                               | -                                   | 12                    | 100                          | -                                   |
| 25,000-49,999  | 5                                          | 5               | 50                                               | -                                   | 5                     | 100                          | -                                   |
| 50,000 or more | 6                                          | 6               | 100                                              | -                                   | 6                     | 100                          | -                                   |
| All cities     | 85                                         | 85              | 57                                               | -                                   | 84                    | 89                           | -                                   |

| City                       | Population | Industrial Wastewater Pretreatment Program | Reclaimed Water | Percent of Total Reclaimed Water Reused/ Applied | Ownership & Use of the Applied Property | Biosolids Application | Percent of Biosolids Applied | Ownership & Use of the Applied Property |
|----------------------------|------------|--------------------------------------------|-----------------|--------------------------------------------------|-----------------------------------------|-----------------------|------------------------------|-----------------------------------------|
| <b>City Size &lt;1,000</b> |            |                                            |                 |                                                  |                                         |                       |                              |                                         |
| Lonerock                   | 34         |                                            |                 |                                                  |                                         |                       |                              |                                         |
| Monument                   | 130        | No                                         | Yes             |                                                  |                                         | No                    |                              |                                         |
| Idanha                     | 135        | No                                         | No              |                                                  |                                         | No                    |                              |                                         |
| Detroit                    | 205        |                                            |                 |                                                  |                                         | No                    |                              |                                         |
| Sumpter                    | 205        |                                            |                 |                                                  |                                         |                       |                              |                                         |
| Waterloo                   | 230        | No                                         | No              |                                                  |                                         | No                    |                              |                                         |
| Ukiah                      | 235        | No                                         | Yes             | 20                                               | City-owned field                        | No                    |                              |                                         |
| Lexington                  | 255        |                                            |                 |                                                  |                                         |                       |                              |                                         |

| City         | Population | Industrial Wastewater Pretreatment Program | Reclaimed Water | Percent of Total Reclaimed Water Reused/ Applied | Ownership & Use of the Applied Property                                     | Biosolids Application | Percent of Biosolids Applied | Ownership & Use of the Applied Property                                       |
|--------------|------------|--------------------------------------------|-----------------|--------------------------------------------------|-----------------------------------------------------------------------------|-----------------------|------------------------------|-------------------------------------------------------------------------------|
| Westfir      | 255        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Nehalem      | 280        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Sodaville    | 310        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Moro         | 325        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Ione         | 330        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Adams        | 350        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Scotts Mills | 364        | No                                         | No              |                                                  |                                                                             | No                    |                              |                                                                               |
| Haines       | 415        | No                                         | Yes             | 100                                              | City farm                                                                   | No                    |                              |                                                                               |
| St. Paul     | 416        | No                                         | Yes             | 100                                              | City-owned property leased to farmer for nursery stock and crop for animals | Yes                   | 100                          | City-owned property leased for nursery stock and crop productions for animals |
| Mosier       | 433        | No                                         | No              |                                                  |                                                                             | No                    |                              |                                                                               |
| Rivergrove   | 445        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Huntington   | 445        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Fossil       | 475        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Gates        | 485        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Mount Vernon | 525        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Cove         | 550        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Manzanita    | 615        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Arlington    | 619        | No                                         | No              |                                                  |                                                                             | Yes                   | 100                          | City property                                                                 |
| Weston       | 675        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |
| Condon       | 685        |                                            |                 |                                                  |                                                                             |                       |                              |                                                                               |

| City                            | Population | Industrial Wastewater Pretreatment Program | Reclaimed Water | Percent of Total Reclaimed Water Reused/ Applied | Ownership & Use of the Applied Property | Biosolids Application | Percent of Biosolids Applied | Ownership & Use of the Applied Property                       |
|---------------------------------|------------|--------------------------------------------|-----------------|--------------------------------------------------|-----------------------------------------|-----------------------|------------------------------|---------------------------------------------------------------|
| Powers                          | 695        | No                                         | No              |                                                  |                                         | No                    |                              |                                                               |
| Echo                            | 705        | No                                         | No              |                                                  |                                         | No                    |                              |                                                               |
| Yachats                         | 800        | No                                         | No              |                                                  |                                         | Yes                   | 50                           | Private property owner is in the business of accepting solids |
| Malin                           | 815        | No                                         | Yes             | 100                                              | City-owned farm land                    | No                    |                              |                                                               |
| Merrill                         | 845        | No                                         | Yes             |                                                  | Private lessee                          | No                    |                              |                                                               |
| Adair Village                   | 850        | No                                         | No              |                                                  |                                         | No                    |                              |                                                               |
| Glendale                        | 874        | Yes                                        | Yes             | 0.45                                             | Sewer Treatment Plant                   | Yes                   | 100                          | Private fenced farm file Number 3373 Permit Number 100742     |
| Prairie City                    | 910        |                                            |                 |                                                  |                                         |                       |                              |                                                               |
| Halsey                          | 917        | No                                         | No              |                                                  |                                         | No                    |                              |                                                               |
| Falls City                      | 950        |                                            | No              |                                                  |                                         | No                    |                              |                                                               |
| Oakland                         | 980        | No                                         | No              |                                                  |                                         | No                    |                              |                                                               |
| Donald                          | 980        |                                            |                 |                                                  |                                         |                       |                              |                                                               |
| <b>City Sizes 1,000 - 4,999</b> |            |                                            |                 |                                                  |                                         |                       |                              |                                                               |
| Island City                     | 1,015      | No                                         | No              |                                                  |                                         | No                    |                              |                                                               |
| Yamhill                         | 1,020      |                                            |                 |                                                  |                                         |                       |                              |                                                               |
| Yoncalla                        | 1,060      | No                                         | No              |                                                  |                                         | No                    |                              |                                                               |
| Joseph                          | 1,090      | No                                         | Yes             |                                                  |                                         |                       |                              |                                                               |
| Athena                          | 1,125      | No                                         | No              |                                                  |                                         | Yes                   | 100                          | Farm ground                                                   |
| Port Orford                     | 1,135      | Yes                                        | No              |                                                  |                                         | No                    |                              |                                                               |
| Riddle                          | 1,185      | No                                         | No              |                                                  |                                         | No                    |                              |                                                               |

| City           | Population | Industrial Wastewater Pretreatment Program | Reclaimed Water | Percent of Total Reclaimed Water Reused/ Applied | Ownership & Use of the Applied Property                   | Biosolids Application | Percent of Biosolids Applied | Ownership & Use of the Applied Property        |
|----------------|------------|--------------------------------------------|-----------------|--------------------------------------------------|-----------------------------------------------------------|-----------------------|------------------------------|------------------------------------------------|
| Cascade Locks  | 1,200      |                                            |                 |                                                  |                                                           |                       |                              |                                                |
| Gold Hill      | 1,220      | No                                         | No              |                                                  |                                                           | Yes                   |                              | Farm                                           |
| Siletz         | 1,290      | No                                         | No              |                                                  |                                                           | No                    |                              |                                                |
| Heppner        | 1,290      | Yes                                        | Yes             | 85                                               | Private farm land and a private golf course               | Yes                   | 100                          | Private farm land                              |
| Dunes City     | 1,310      | No                                         | No              |                                                  |                                                           | No                    |                              |                                                |
| Bay City       | 1,310      | No                                         | No              |                                                  |                                                           | No                    |                              |                                                |
| Rockaway Beach | 1,325      |                                            |                 |                                                  |                                                           |                       |                              |                                                |
| Culver         | 1,370      | No                                         | Yes             | 100                                              | City-owned farm land                                      | No                    |                              |                                                |
| Depoe Bay      | 1,405      | No                                         | No              |                                                  |                                                           | Yes                   | 100                          | Private farm land                              |
| Gearhart       | 1,465      | No                                         | No              |                                                  |                                                           | No                    |                              |                                                |
| Hines          | 1,565      | No                                         | Yes             | 100                                              | Neighboring Burns/ Hines jointly owned meadow grass field | No                    |                              |                                                |
| La Pine        | 1,670      | No                                         | No              |                                                  |                                                           | No                    |                              |                                                |
| Brownsville    | 1,670      |                                            |                 |                                                  |                                                           |                       |                              |                                                |
| Lakeside       | 1,705      |                                            |                 |                                                  |                                                           |                       |                              |                                                |
| Clatskanie     | 1,729      | No                                         | No              |                                                  |                                                           | Yes                   | 100                          | City-owned property, sheep herd contracted use |
| John Day       | 1,745      | No                                         | No              |                                                  |                                                           | Yes                   | 100                          | Private ranch grazing land                     |
| Banks          | 1,785      |                                            |                 |                                                  |                                                           |                       |                              |                                                |
| Irrigon        | 1,835      | No                                         | No              |                                                  |                                                           | No                    |                              |                                                |

| City          | Population | Industrial Wastewater Pretreatment Program | Reclaimed Water | Percent of Total Reclaimed Water Reused/ Applied | Ownership & Use of the Applied Property   | Biosolids Application | Percent of Biosolids Applied | Ownership & Use of the Applied Property     |
|---------------|------------|--------------------------------------------|-----------------|--------------------------------------------------|-------------------------------------------|-----------------------|------------------------------|---------------------------------------------|
| Columbia City | 1,945      | No                                         | No              |                                                  |                                           |                       |                              |                                             |
| Vale          | 1,976      | No                                         | Yes             | 20                                               | City farm ground                          | No                    |                              |                                             |
| Waldport      | 2,080      |                                            |                 |                                                  |                                           |                       |                              |                                             |
| Rogue River   | 2,145      | Yes                                        | No              |                                                  |                                           | Yes                   | 100                          | Private farm land                           |
| Union         | 2,240      | No                                         | Yes             | 40                                               | County golf course                        | Yes                   | 100                          | Private farm land ownership; Hay production |
| Vernonia      | 2,450      |                                            |                 |                                                  |                                           |                       |                              |                                             |
| Lakeview      | 2,490      | No                                         | Yes             | 100                                              | Private farm use; Hay production, grazing | No                    |                              |                                             |
| Gervais       | 2,520      | No                                         | No              |                                                  |                                           | No                    |                              |                                             |
| Myrtle Point  | 2,525      | Yes                                        | No              |                                                  |                                           | No                    |                              |                                             |
| Jacksonville  | 2,840      |                                            |                 |                                                  |                                           |                       |                              |                                             |
| Estacada      | 2,880      | No                                         | No              |                                                  |                                           | Yes                   | 4                            | Private properties as requested & agreed    |
| Bandon        | 3,100      | Yes                                        | Yes             |                                                  |                                           | Yes                   | 100                          | Agricultural lands                          |
| Nyssa         | 3,200      | No                                         | No              |                                                  |                                           | No                    |                              |                                             |
| Mt. Angel     | 3,300      | Yes                                        | No              |                                                  |                                           | No                    |                              |                                             |
| Boardman      | 3,405      |                                            |                 |                                                  |                                           |                       |                              |                                             |
| Toledo        | 3,465      | No                                         | No              |                                                  |                                           | Yes                   | 3.32                         | Private agricultural land                   |
| Aumsville     | 3,750      | No                                         | Yes             | 10                                               | 75 acres of city-owned farm land          | No                    |                              |                                             |
| Coquille      | 3,865      | No                                         | No              |                                                  |                                           | No                    |                              |                                             |
| Wood Village  | 3,875      | Yes                                        | No              |                                                  |                                           | No                    |                              |                                             |

| City                            | Population | Industrial Wastewater Pretreatment Program | Reclaimed Water | Percent of Total Reclaimed Water Reused/ Applied | Ownership & Use of the Applied Property                                 | Biosolids Application | Percent of Biosolids Applied | Ownership & Use of the Applied Property     |
|---------------------------------|------------|--------------------------------------------|-----------------|--------------------------------------------------|-------------------------------------------------------------------------|-----------------------|------------------------------|---------------------------------------------|
| Phoenix                         | 4,585      |                                            |                 |                                                  |                                                                         |                       |                              |                                             |
| Philomath                       | 4,625      |                                            |                 |                                                  |                                                                         |                       |                              |                                             |
| Veneta                          | 4,635      | No                                         | No              |                                                  |                                                                         | Yes                   | 100                          | City-owned grass fields used to harvest hay |
| <b>City Sizes 5,000 - 9,999</b> |            |                                            |                 |                                                  |                                                                         |                       |                              |                                             |
| Creswell                        | 5,031      | No                                         | Yes             | 100                                              | City-owned fields                                                       | No                    |                              |                                             |
| Warrenton                       | 5,050      |                                            |                 |                                                  |                                                                         |                       |                              |                                             |
| Sheridan                        | 6,170      | No                                         | Yes             | 5                                                | Farm land for hay                                                       | No                    |                              |                                             |
| Talent                          | 6,170      |                                            |                 |                                                  |                                                                         |                       |                              |                                             |
| Madras                          | 6,255      |                                            |                 |                                                  |                                                                         |                       |                              |                                             |
| Sutherlin                       | 7,930      | Yes                                        | Yes             | 32                                               | Golf Course                                                             | Yes                   | 55                           | Private                                     |
| Molalla                         | 8,200      | No                                         | Yes             | 25                                               | Pasture land, lawn, nursery, stock irrigation water                     |                       |                              |                                             |
| Florence                        | 8,466      | No                                         | No              |                                                  |                                                                         | No                    |                              |                                             |
| Eagle Point                     | 8,575      |                                            |                 |                                                  |                                                                         |                       |                              |                                             |
| Independence                    | 8,585      |                                            |                 |                                                  |                                                                         |                       |                              |                                             |
| Sweet Home                      | 9,065      | No                                         | No              |                                                  |                                                                         | No                    |                              |                                             |
| Silverton                       | 9,330      | No                                         | Yes             | 20                                               | The Oregon Gardens                                                      | Yes                   | 100                          | Private agricultural land                   |
| Astoria                         | 9,500      |                                            |                 |                                                  |                                                                         |                       |                              |                                             |
| Cottage Grove                   | 9,785      | No                                         | Yes             | 100                                              | City-owned golf course, and a ~10 acres of undeveloped private property | No                    |                              |                                             |

| City                              | Population | Industrial Wastewater Pretreatment Program | Reclaimed Water | Percent of Total Reclaimed Water Reused/ Applied | Ownership & Use of the Applied Property    | Biosolids Application | Percent of Biosolids Applied | Ownership & Use of the Applied Property                                                                 |
|-----------------------------------|------------|--------------------------------------------|-----------------|--------------------------------------------------|--------------------------------------------|-----------------------|------------------------------|---------------------------------------------------------------------------------------------------------|
| Sandy                             | 9,980      | No                                         | Yes             | 40                                               | Private wholesale nursery                  | Yes                   | 100                          | Private agricultural                                                                                    |
| <b>City Sizes 10,000 - 24,999</b> |            |                                            |                 |                                                  |                                            |                       |                              |                                                                                                         |
| Gladstone                         | 11,495     |                                            |                 |                                                  |                                            |                       |                              |                                                                                                         |
| Cornelius                         | 12,161     | Yes                                        |                 | N/A                                              | N/A                                        | No                    |                              |                                                                                                         |
| St. Helens                        | 12,895     | Yes                                        | No              |                                                  |                                            | No                    |                              |                                                                                                         |
| The Dalles                        | 14,400     | Yes                                        | No              |                                                  |                                            | Yes                   | 100                          | Private agricultural lands                                                                              |
| Dallas                            | 14,800     | Yes                                        | No              |                                                  |                                            | No                    |                              |                                                                                                         |
| Lebanon                           | 15,660     | Yes                                        | No              |                                                  |                                            | Yes                   | 100                          | Private farm land                                                                                       |
| Troutdale                         | 16,015     |                                            |                 |                                                  |                                            |                       |                              |                                                                                                         |
| Coos Bay                          | 16,160     | No                                         | No              |                                                  |                                            | Yes                   | 100                          | Private grazing land                                                                                    |
| Pendleton                         | 16,600     | Yes                                        | No              |                                                  |                                            | Yes                   | 100                          | City-owned land at Pendleton Airport - 1,000 acres currently available - 350 acres required every year. |
| Sherwood                          | 18,771     | No                                         | No              |                                                  |                                            | No                    |                              |                                                                                                         |
| Ashland                           | 20,295     | Yes                                        | No              |                                                  |                                            | No                    |                              |                                                                                                         |
| Milwaukie                         | 20,500     | Yes                                        | No              |                                                  |                                            | No                    |                              |                                                                                                         |
| Klamath Falls                     | 21,200     |                                            |                 |                                                  |                                            |                       |                              |                                                                                                         |
| Wilsonville                       | 21,550     | Yes                                        | Yes             | 18                                               | City's Wastewater Treatment Plant property | Yes                   | 100                          | Farm land                                                                                               |

| City                              | Population | Industrial Wastewater Pretreatment Program | Reclaimed Water | Percent of Total Reclaimed Water Reused/ Applied | Ownership & Use of the Applied Property | Biosolids Application | Percent of Biosolids Applied | Ownership & Use of the Applied Property                                                                        |
|-----------------------------------|------------|--------------------------------------------|-----------------|--------------------------------------------------|-----------------------------------------|-----------------------|------------------------------|----------------------------------------------------------------------------------------------------------------|
| Forest Grove                      | 22,000     |                                            |                 |                                                  |                                         |                       |                              |                                                                                                                |
| Roseburg                          | 22,275     |                                            |                 |                                                  |                                         |                       |                              |                                                                                                                |
| Newberg                           | 22,396     | Yes                                        | Yes             | 1                                                | Public golf course                      | No                    |                              |                                                                                                                |
| <b>City Sizes 25,000 - 49,999</b> |            |                                            |                 |                                                  |                                         |                       |                              |                                                                                                                |
| West Linn                         | 25,425     | No                                         | No              |                                                  |                                         | No                    |                              |                                                                                                                |
| Redmond                           | 26,590     | Yes                                        | Yes             | 50                                               | City-owned hay fields                   | Yes                   | 100                          | Public and privately owned farm land                                                                           |
| Oregon City                       | 33,390     | Yes                                        | No              |                                                  |                                         | No                    |                              |                                                                                                                |
| Grants Pass                       | 35,000     | Yes                                        | No              |                                                  |                                         | No                    |                              |                                                                                                                |
| Lake Oswego                       | 36,990     | Yes                                        | No              |                                                  |                                         | No                    |                              |                                                                                                                |
| Tigard                            | 49,135     |                                            |                 |                                                  |                                         |                       |                              |                                                                                                                |
| <b>City Sizes 50,000 or more</b>  |            |                                            |                 |                                                  |                                         |                       |                              |                                                                                                                |
| Albany                            | 50,720     | Yes                                        | No              |                                                  |                                         | No                    |                              |                                                                                                                |
| Springfield                       | 59,990     | Yes                                        | Yes             | 100                                              | Public landscape irrigation             | Yes                   | 100                          | Public-owned poplar tree biocycle farm and other public land 30percent. Off-site private farm land 100percent. |
| Medford                           | 76,300     | Yes                                        | No              |                                                  |                                         | No                    |                              |                                                                                                                |
| Bend                              | 81,000     | Yes                                        | Yes             | 100                                              | Private golf course                     | Yes                   | 100                          | Private farm land                                                                                              |
| Hillsboro                         | 81,310     |                                            |                 |                                                  |                                         |                       |                              |                                                                                                                |
| Beaverton                         | 93,000     | No                                         | No              |                                                  |                                         | No                    |                              |                                                                                                                |



| City     | Population | Industrial Wastewater Pretreatment Program | Reclaimed Water | Percent of Total Reclaimed Water Reused/ Applied | Ownership & Use of the Applied Property | Biosolids Application | Percent of Biosolids Applied | Ownership & Use of the Applied Property                            |
|----------|------------|--------------------------------------------|-----------------|--------------------------------------------------|-----------------------------------------|-----------------------|------------------------------|--------------------------------------------------------------------|
| Salem    | 157,888    | Yes                                        | No              |                                                  |                                         | Yes                   | 100                          | All privately-owned farm land growing sod, grass seed, and pasture |
| Portland | 592,120    |                                            |                 |                                                  |                                         |                       |                              |                                                                    |

**Table D.6: Wastewater Treatment and Quality Limitations**

|                | Percentage of Cities |           |                                 |                  |                     |                                                          | Percentage of Cities |
|----------------|----------------------|-----------|---------------------------------|------------------|---------------------|----------------------------------------------------------|----------------------|
| City Size      | Primary              | Secondary | Advanced Treatment/<br>Tertiary | Nitrogen Removal | Phosphorous Removal | Plants Releasing Water Under Special Regulations? (TMDL) |                      |
| <1,000         | 54                   | 38        | 8                               | 0                | 8                   | 33                                                       |                      |
| 1,000-4,999    | 28                   | 52        | 21                              | 24               | 17                  | 31                                                       |                      |
| 5,000-9,999    | 11                   | 44        | 44                              | 33               | 22                  | 56                                                       |                      |
| 10,000-24,999  | 22                   | 67        | 11                              | 11               | 11                  | 73                                                       |                      |
| 25,000-49,999  | 0                    | 67        | 33                              | 67               | 33                  | 50                                                       |                      |
| 50,000 or more | 0                    | 67        | 33                              | 17               | 0                   | 67                                                       |                      |
| All cities     | 26                   | 52        | 22                              | 20               | 14                  | 45                                                       |                      |

| City                       | Population | Primary | Secondary | Advanced Treatment/<br>Tertiary | Nitrogen Removal | Phosphorous Removal | Plants Releasing Water Under Special Regulations? (TMDL) | If yes, what are they doing? |
|----------------------------|------------|---------|-----------|---------------------------------|------------------|---------------------|----------------------------------------------------------|------------------------------|
| <b>City size &lt;1,000</b> |            |         |           |                                 |                  |                     |                                                          |                              |
| Lonerock                   | 34         |         |           |                                 |                  |                     |                                                          |                              |
| Monument                   | 130        |         |           |                                 |                  |                     |                                                          |                              |
| Idanha                     | 135        |         |           |                                 |                  |                     | No                                                       |                              |
| Detroit                    | 205        |         |           |                                 |                  |                     |                                                          |                              |
| Sumpter                    | 205        |         |           |                                 |                  |                     |                                                          |                              |
| Waterloo                   | 230        |         |           |                                 |                  |                     | No                                                       |                              |

| City         | Population | Primary | Secondary | Advanced Treatment/<br>Tertiary | Nitrogen Removal | Phosphorous Removal | Plants Releasing Water Under Special Regulations? (TMDL) | If yes, what are they doing?                                  |
|--------------|------------|---------|-----------|---------------------------------|------------------|---------------------|----------------------------------------------------------|---------------------------------------------------------------|
| Ukiah        | 235        | ✓       |           |                                 |                  |                     | No                                                       |                                                               |
| Lexington    | 255        |         |           |                                 |                  |                     |                                                          |                                                               |
| Westfir      | 255        |         |           |                                 |                  |                     |                                                          |                                                               |
| Nehalem      | 280        |         |           |                                 |                  |                     |                                                          |                                                               |
| Sodaville    | 310        |         |           |                                 |                  |                     |                                                          |                                                               |
| Moro         | 325        |         |           |                                 |                  |                     |                                                          |                                                               |
| Ione         | 330        |         |           |                                 |                  |                     |                                                          |                                                               |
| Adams        | 350        |         |           |                                 |                  |                     |                                                          |                                                               |
| Scotts Mills | 364        |         |           |                                 |                  |                     |                                                          |                                                               |
| Haines       | 415        | ✓       |           |                                 |                  |                     | No                                                       |                                                               |
| St. Paul     | 416        |         | ✓         |                                 |                  |                     | No                                                       |                                                               |
| Mosier       | 433        |         | ✓         |                                 |                  |                     | Yes                                                      | Releasing to the Columbia River which has a temperature TMDL. |
| Rivergrove   | 445        |         |           |                                 |                  |                     |                                                          |                                                               |
| Huntington   | 445        |         |           |                                 |                  |                     |                                                          |                                                               |
| Fossil       | 475        |         |           |                                 |                  |                     |                                                          |                                                               |
| Gates        | 485        |         |           |                                 |                  |                     |                                                          |                                                               |
| Mount Vernon | 525        |         |           |                                 |                  |                     |                                                          |                                                               |
| Cove         | 550        |         |           |                                 |                  |                     |                                                          |                                                               |
| Manzanita    | 615        |         |           |                                 |                  |                     |                                                          |                                                               |
| Arlington    | 619        | ✓       |           |                                 |                  |                     | No                                                       |                                                               |
| Weston       | 675        |         |           |                                 |                  |                     |                                                          |                                                               |
| Condon       | 685        |         |           |                                 |                  |                     |                                                          |                                                               |

| City                            | Population | Primary | Secondary | Advanced Treatment/<br>Tertiary | Nitrogen Removal | Phosphorous Removal | Plants Releasing Water Under Special Regulations? (TMDL) | If yes, what are they doing?                                                                                                                                                                                                                                    |
|---------------------------------|------------|---------|-----------|---------------------------------|------------------|---------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Powers                          | 695        |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                 |
| Echo                            | 705        | ✓       |           |                                 |                  |                     | Yes                                                      | Lagoon system; permit allows discharge to the Umatilla River from Nov. 1 through Apr. 30 with limits on BOD, Ecoli and TSS. Operating under a MAO which allows higher limits than normal. Only discharge from January through March; pumping limit is .120 MGD. |
| Yachats                         | 800        |         | ✓         |                                 |                  |                     | Yes                                                      |                                                                                                                                                                                                                                                                 |
| Malin                           | 815        | ✓       |           |                                 |                  |                     | No                                                       |                                                                                                                                                                                                                                                                 |
| Merrill                         | 845        |         | ✓         |                                 |                  |                     | Yes                                                      | Irrigating alfalfa with reclaimed water.                                                                                                                                                                                                                        |
| Adair Village                   | 850        | ✓       |           |                                 |                  |                     | No                                                       |                                                                                                                                                                                                                                                                 |
| Glendale                        | 874        |         |           | ✓                               |                  | ✓                   | No                                                       |                                                                                                                                                                                                                                                                 |
| Prairie City                    | 910        |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                 |
| Halsey                          | 917        |         | ✓         |                                 |                  |                     | No                                                       |                                                                                                                                                                                                                                                                 |
| Falls City                      | 950        |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                 |
| Oakland                         | 980        | ✓       |           |                                 |                  |                     | Yes                                                      |                                                                                                                                                                                                                                                                 |
| Donald                          | 980        |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                 |
| <b>City Sizes 1,000 - 4,999</b> |            |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                 |
| Island City                     | 1,015      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                 |
| Yamhill                         | 1,020      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                 |
| Yoncalla                        | 1,060      |         | ✓         |                                 |                  |                     | Yes                                                      |                                                                                                                                                                                                                                                                 |

| City           | Population | Primary | Secondary | Advanced<br>Treatment/<br>Tertiary | Nitrogen<br>Removal | Phosphorous<br>Removal | Plants Releasing<br>Water Under<br>Special<br>Regulations?<br>(TMDL) | If yes, what are they doing?                                                                              |
|----------------|------------|---------|-----------|------------------------------------|---------------------|------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Joseph         | 1,090      |         |           |                                    |                     |                        |                                                                      |                                                                                                           |
| Athena         | 1,125      |         | ✓         |                                    |                     |                        | No                                                                   |                                                                                                           |
| Port Orford    | 1,135      | ✓       |           |                                    |                     |                        |                                                                      |                                                                                                           |
| Riddle         | 1,185      | ✓       |           |                                    |                     |                        | No                                                                   |                                                                                                           |
| Cascade Locks  | 1,200      |         |           |                                    |                     |                        |                                                                      |                                                                                                           |
| Gold Hill      | 1,220      | ✓       |           |                                    |                     |                        | Yes                                                                  |                                                                                                           |
| Siletz         | 1,290      |         | ✓         |                                    |                     |                        | No                                                                   |                                                                                                           |
| Heppner        | 1,290      |         | ✓         |                                    |                     |                        | Yes                                                                  | TBD by DEQ. Currently, BOD(5) 45 mg/L weekly, TSS 45 mg/L weekly, May - Oct 0.15 MGD, Nov-April 0.25 MGD. |
| Dunes City     | 1,310      |         |           |                                    |                     |                        |                                                                      |                                                                                                           |
| Bay City       | 1,310      |         |           | ✓                                  |                     |                        | Yes                                                                  | Test / CBOD, TSS, Fecal Col Bact, Enterococcus and PH                                                     |
| Rockaway Beach | 1,325      |         |           |                                    |                     |                        |                                                                      |                                                                                                           |
| Culver         | 1,370      | ✓       |           |                                    |                     |                        | No                                                                   |                                                                                                           |
| Depoe Bay      | 1,405      |         | ✓         |                                    |                     |                        | No                                                                   |                                                                                                           |
| Gearhart       | 1,465      |         |           |                                    |                     |                        |                                                                      |                                                                                                           |
| Hines          | 1,565      |         |           |                                    |                     |                        | No                                                                   |                                                                                                           |
| La Pine        | 1,670      |         | ✓         |                                    |                     |                        | No                                                                   |                                                                                                           |
| Brownsville    | 1,670      |         |           |                                    |                     |                        |                                                                      |                                                                                                           |

| City          | Population | Primary | Secondary | Advanced Treatment/<br>Tertiary | Nitrogen Removal | Phosphorous Removal | Plants Releasing Water Under Special Regulations? (TMDL) | If yes, what are they doing?                                                                                                             |
|---------------|------------|---------|-----------|---------------------------------|------------------|---------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Lakeside      | 1,705      |         |           |                                 |                  |                     |                                                          |                                                                                                                                          |
| Clatskanie    | 1,729      |         | ✓         |                                 |                  |                     | No                                                       |                                                                                                                                          |
| John Day      | 1,745      |         | ✓         |                                 |                  |                     | No                                                       |                                                                                                                                          |
| Banks         | 1,785      |         |           |                                 |                  |                     |                                                          |                                                                                                                                          |
| Irrigon       | 1,835      |         |           | ✓                               | ✓                | ✓                   | No                                                       |                                                                                                                                          |
| Columbia City | 1,945      |         |           |                                 |                  |                     |                                                          |                                                                                                                                          |
| Vale          | 1,976      | ✓       |           |                                 |                  |                     | No                                                       |                                                                                                                                          |
| Waldport      | 2,080      |         |           |                                 |                  |                     |                                                          |                                                                                                                                          |
| Rogue River   | 2,145      |         |           | ✓                               |                  |                     | Yes                                                      |                                                                                                                                          |
| Union         | 2,240      |         | ✓         |                                 |                  |                     | No                                                       |                                                                                                                                          |
| Vernonia      | 2,450      |         |           |                                 |                  |                     |                                                          |                                                                                                                                          |
| Lakeview      | 2,490      |         | ✓         |                                 |                  |                     | No                                                       |                                                                                                                                          |
| Gervais       | 2,520      | ✓       |           |                                 |                  |                     | No                                                       |                                                                                                                                          |
| Myrtle Point  | 2,525      |         | ✓         |                                 |                  |                     | Yes                                                      | Monitoring BOD and TSS removal. New treatment plant is under construction and will facilitate meeting additional treatment requirements. |
| Jacksonville  | 2,840      |         |           |                                 |                  |                     |                                                          |                                                                                                                                          |
| Estacada      | 2,880      | ✓       |           |                                 |                  |                     | Yes                                                      |                                                                                                                                          |
| Bandon        | 3,100      |         | ✓         |                                 | ✓                | ✓                   | Yes                                                      | In compliance with all discharge permit requirements.                                                                                    |
| Nyssa         | 3,200      |         |           | ✓                               | ✓                | ✓                   | No                                                       |                                                                                                                                          |

| City                            | Population | Primary | Secondary | Advanced Treatment/<br>Tertiary | Nitrogen Removal | Phosphorous Removal | Plants Releasing Water Under Special Regulations? (TMDL) | If yes, what are they doing?                                                                                                                                          |
|---------------------------------|------------|---------|-----------|---------------------------------|------------------|---------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mt. Angel                       | 3,300      |         | ✓         |                                 |                  |                     | Yes                                                      | Release lagoon-filtered water.                                                                                                                                        |
| Boardman                        | 3,405      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                       |
| Toledo                          | 3,465      |         |           | ✓                               | ✓                |                     | No                                                       |                                                                                                                                                                       |
| Aumsville                       | 3,750      |         | ✓         |                                 |                  |                     | No                                                       |                                                                                                                                                                       |
| Coquille                        | 3,865      | ✓       |           |                                 | ✓                | ✓                   | No                                                       |                                                                                                                                                                       |
| Wood Village                    | 3,875      |         | ✓         |                                 | ✓                | ✓                   | No                                                       |                                                                                                                                                                       |
| Phoenix                         | 4,585      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                       |
| Philomath                       | 4,625      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                       |
| Veneta                          | 4,635      |         |           | ✓                               | ✓                |                     | No                                                       |                                                                                                                                                                       |
| <b>City Sizes 5,000 - 9,999</b> |            |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                       |
| Creswell                        | 5,031      | ✓       |           |                                 |                  |                     | No                                                       |                                                                                                                                                                       |
| Warrenton                       | 5,050      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                       |
| Sheridan                        | 6,170      |         | ✓         |                                 |                  |                     | No                                                       |                                                                                                                                                                       |
| Talent                          | 6,170      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                       |
| Madras                          | 6,255      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                       |
| Sutherlin                       | 7,930      |         | ✓         |                                 |                  |                     | Yes                                                      | Operate on a Mutual Agreement and Order (MAO) with DEQ. Within 3-5 years, Sutherlin will construct a new wastewater treatment facility and meet current NPDES permit. |
| Molalla                         | 8,200      |         |           | ✓                               |                  |                     | Yes                                                      |                                                                                                                                                                       |
| Florence                        | 8,466      |         | ✓         |                                 |                  |                     | No                                                       |                                                                                                                                                                       |

| City                              | Population | Primary | Secondary | Advanced Treatment/<br>Tertiary | Nitrogen Removal | Phosphorous Removal | Plants Releasing Water Under Special Regulations? (TMDL) | If yes, what are they doing?                                                                                                                                   |
|-----------------------------------|------------|---------|-----------|---------------------------------|------------------|---------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eagle Point                       | 8,575      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                |
| Independence                      | 8,585      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                |
| Sweet Home                        | 9,065      |         |           | ✓                               | ✓                |                     | Yes                                                      | South Santiam River that flows into the Willamette River Basin.                                                                                                |
| Silverton                         | 9,330      |         | ✓         |                                 | ✓                |                     | Yes                                                      |                                                                                                                                                                |
| Astoria                           | 9,500      |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                |
| Cottage Grove                     | 9,785      |         |           | ✓                               |                  | ✓                   | Yes                                                      | Meet NPDES permit requirements. In summer months, the City irrigates its golf course with Class 4 reuse water to ensure the City meets its phosphorous limits. |
| Sandy                             | 9,980      |         |           | ✓                               | ✓                | ✓                   | No                                                       |                                                                                                                                                                |
| <b>City Sizes 10,000 - 24,999</b> |            |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                |
| Gladstone                         | 11,495     |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                |
| Cornelius                         | 12,161     |         |           |                                 |                  |                     | No                                                       |                                                                                                                                                                |
| St. Helens                        | 12,895     |         | ✓         |                                 |                  |                     | Yes                                                      | Limitations on megawatts; WWTP staff perform testing to ensure the TMDL limits are not exceeded.                                                               |



| City          | Population | Primary | Secondary | Advanced Treatment/<br>Tertiary | Nitrogen Removal | Phosphorous Removal | Plants Releasing Water Under Special Regulations? (TMDL) | If yes, what are they doing?                                                                                                                                                                                                                                          |
|---------------|------------|---------|-----------|---------------------------------|------------------|---------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Dalles    | 14,400     |         | ✓         |                                 |                  |                     | Yes                                                      | Segment of Columbia River is water quality limited for pH. City's permit is currently under review for renewal and a new permit may restrict effluent pH to a narrower range than the historical 6.0-9.0. No treatment for pH adjustment is currently being provided. |
| Dallas        | 14,800     |         | ✓         |                                 |                  |                     | Yes                                                      | Discharge per NPDES Permit                                                                                                                                                                                                                                            |
| Lebanon       | 15,660     | ✓       |           |                                 |                  |                     | Yes                                                      | Comply with DEQ's NPDES permit conditions.                                                                                                                                                                                                                            |
| Troutdale     | 16,015     |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                       |
| Coos Bay      | 16,160     |         |           |                                 |                  |                     | No                                                       |                                                                                                                                                                                                                                                                       |
| Pendleton     | 16,600     |         | ✓         |                                 |                  |                     | Yes                                                      | Temperature and ammonia are the TMDL limitations.                                                                                                                                                                                                                     |
| Sherwood      | 18,771     |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                       |
| Ashland       | 20,295     |         | ✓         |                                 |                  | ✓                   | No                                                       |                                                                                                                                                                                                                                                                       |
| Milwaukie     | 20,500     |         | ✓         |                                 |                  |                     | Yes                                                      | Main stream Willamette TMDLs are in effect.                                                                                                                                                                                                                           |
| Klamath Falls | 21,200     |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                       |
| Wilsonville   | 21,550     |         |           | ✓                               | ✓                |                     | Yes                                                      | Excess thermal Load 39 million Kcals/day.                                                                                                                                                                                                                             |
| Forest Grove  | 22,000     |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                       |
| Roseburg      | 22,275     |         |           |                                 |                  |                     |                                                          |                                                                                                                                                                                                                                                                       |

| City                              | Population | Primary | Secondary | Advanced Treatment/<br>Tertiary | Nitrogen Removal | Phosphorous Removal | Plants Releasing Water Under Special Regulations? (TMDL) | If yes, what are they doing?                                                                                 |
|-----------------------------------|------------|---------|-----------|---------------------------------|------------------|---------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Newberg                           | 22,396     | ✓       |           |                                 |                  |                     | Yes                                                      | TMDL plan includes treatment for mercury, temperature, TSS, CBOD, and bacteria.                              |
| <b>City Sizes 25,000 - 49,999</b> |            |         |           |                                 |                  |                     |                                                          |                                                                                                              |
| West Linn                         | 25,425     |         |           | ✓                               | ✓                | ✓                   | Yes                                                      | TBD                                                                                                          |
| Redmond                           | 26,590     |         | ✓         |                                 | ✓                |                     | No                                                       |                                                                                                              |
| Oregon City                       | 33,390     |         |           |                                 |                  |                     |                                                          |                                                                                                              |
| Grants Pass                       | 35,000     |         | ✓         |                                 |                  |                     | Yes                                                      | TMDL                                                                                                         |
| Lake Oswego                       | 36,990     |         |           |                                 |                  |                     |                                                          |                                                                                                              |
| Tigard                            | 49,135     |         |           |                                 |                  |                     |                                                          |                                                                                                              |
| <b>City Sizes 50,000 or more</b>  |            |         |           |                                 |                  |                     |                                                          |                                                                                                              |
| Albany                            | 50,720     |         | ✓         |                                 |                  |                     | Yes                                                      | TMDL for temperature, bacteria, and mercury. The City developed and is following a TMDL Implementation Plan. |
| Springfield                       | 59,990     |         |           | ✓                               | ✓                |                     | No                                                       |                                                                                                              |
| Medford                           | 76,300     |         | ✓         |                                 |                  |                     | Yes                                                      | Temperature trading to reduce thermal loading on the Rogue River.                                            |
| Bend                              | 81,000     |         |           | ✓                               |                  |                     | No                                                       |                                                                                                              |
| Hillsboro                         | 81,310     |         |           |                                 |                  |                     |                                                          |                                                                                                              |
| Beaverton                         | 93,000     |         | ✓         |                                 |                  |                     | Yes                                                      |                                                                                                              |

| City     | Population | Primary | Secondary | Advanced<br>Treatment/<br>Tertiary | Nitrogen<br>Removal | Phosphorous<br>Removal | Plants Releasing<br>Water Under<br>Special<br>Regulations?<br>(TMDL) | If yes, what are they doing?                                                                                                                        |
|----------|------------|---------|-----------|------------------------------------|---------------------|------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Salem    | 157,888    |         | ✓         |                                    |                     |                        | Yes                                                                  | The TMDL and water quality limits are on the Willamette River. Don't know limits until new permit is issued; previously monitoring for temperature. |
| Portland | 592,120    |         |           |                                    |                     |                        |                                                                      |                                                                                                                                                     |

## APPENDIX E: STORMWATER FEES, PRICING, AND CHARACTERISTICS

Table E.1: Stormwater Fees & System Characteristics

| City Size      | Last Year of Rate Change | Stormwater Fees |                      |                              |                                           |       | Avg. Monthly Household Payment (\$) | Total Miles  |                                   | Avg. EDU for Residential (sq. ft.) |
|----------------|--------------------------|-----------------|----------------------|------------------------------|-------------------------------------------|-------|-------------------------------------|--------------|-----------------------------------|------------------------------------|
|                |                          | No charge       | Separate Utility fee | Included in wastewater rates | Paid to a join district within the county | Other |                                     | Piped System | Open Channel, Ditches, and Swales |                                    |
| <1,000         | 2012                     | 2               | 2                    | 0                            | 0                                         | 1     | 2.75                                | 4            | 4                                 | 940                                |
| 1,000-4,999    | 2013                     | 5               | 7                    | 0                            | 0                                         | 4     | 2.30                                | 8            | 3                                 | 1,250                              |
| 5,000-9,999    | 2011                     | 2               | 11                   | 0                            | 0                                         | 0     | 3.50                                | 34           | 14                                | 3,207                              |
| 10,000-24,999  | 2013                     | 1               | 9                    | 2                            | 2                                         | 1     | 7.25                                | 52           | 13                                | 2,777                              |
| 25,000-49,999  | 2014                     | 0               | 5                    | 0                            | 0                                         | 0     | 7.84                                | 123          | 53                                | 2,407                              |
| 50,000 or more | 2012                     | 0               | 4                    | 0                            | 0                                         | 1     | 8.20                                | 257          | 84                                | 2,974                              |
| All cities     | 2013                     | 10              | 38                   | 2                            | 2                                         | 7     | 4.88                                | 56           | 19                                | 2,382                              |

| City             | Population | Last Year of Rate Change | Stormwater Fees |                      |                              |                                           |       | Avg. Monthly Household Payment | Total Miles  |                                   | Avg. EDU for Residential in (sq. ft.) |
|------------------|------------|--------------------------|-----------------|----------------------|------------------------------|-------------------------------------------|-------|--------------------------------|--------------|-----------------------------------|---------------------------------------|
|                  |            |                          | No charge       | Separate utility fee | Included in wastewater rates | Paid to a join district within the county | Other |                                | Piped System | Open Channel, Ditches, and Swales |                                       |
| City Size <1,000 |            |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Lonerock         | 34         |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Monument         | 130        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |

| City         | Population | Last Year of Rate Change | Stormwater Fees |                      |                              |                                           |       | Avg. Monthly Household Payment | Total Miles  |                                   | Avg. EDU for Residential in (sq. ft.) |
|--------------|------------|--------------------------|-----------------|----------------------|------------------------------|-------------------------------------------|-------|--------------------------------|--------------|-----------------------------------|---------------------------------------|
|              |            |                          | No charge       | Separate utility fee | Included in wastewater rates | Paid to a join district within the county | Other |                                | Piped System | Open Channel, Ditches, and Swales |                                       |
| Idanha       | 135        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Detroit      | 205        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Sumpter      | 205        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Waterloo     | 230        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Ukiah        | 235        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Lexington    | 255        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Westfir      | 255        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Nehalem      | 280        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Sodaville    | 310        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Moro         | 325        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Ione         | 330        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Adams        | 350        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Scotts Mills | 364        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Haines       | 415        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| St. Paul     | 416        |                          | ✓               |                      |                              |                                           |       | \$0.00                         | 0.75         | 1.25                              | 0                                     |
| Mosier       | 433        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Rivergrove   | 445        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Huntington   | 445        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Fossil       | 475        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Gates        | 485        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Mount Vernon | 525        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |

| City                           | Population | Last Year of Rate Change | Stormwater Fees |                      |                              |                                           |       | Avg. Monthly Household Payment | Total Miles  |                                   | Avg. EDU for Residential in (sq. ft.) |
|--------------------------------|------------|--------------------------|-----------------|----------------------|------------------------------|-------------------------------------------|-------|--------------------------------|--------------|-----------------------------------|---------------------------------------|
|                                |            |                          | No charge       | Separate utility fee | Included in wastewater rates | Paid to a join district within the county | Other |                                | Piped System | Open Channel, Ditches, and Swales |                                       |
| Cove                           | 550        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Manzanita                      | 615        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Arlington                      | 619        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Weston                         | 675        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Condon                         | 685        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Powers                         | 695        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Echo                           | 705        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Yachats                        | 800        | >10 yrs. ago             | ✓               |                      |                              |                                           |       | \$0.00                         | 7            | 7                                 | 2,500                                 |
| Malin                          | 815        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Merrill                        | 845        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Adair Village                  | 850        | 2009                     |                 | ✓                    |                              |                                           |       | \$2.50                         | 6            | 0                                 | 2,200                                 |
| Glendale                       | 874        |                          |                 |                      |                              |                                           |       |                                | 0            | 3                                 | 0                                     |
| Prairie City                   | 910        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Halsey                         | 917        | 2014                     |                 | ✓                    |                              |                                           |       | \$8.50                         | 3.6          |                                   |                                       |
| Falls City                     | 950        |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Oakland                        | 980        |                          |                 |                      |                              |                                           |       |                                | 9            | 9                                 | 1                                     |
| Donald                         | 980        |                          |                 |                      |                              |                                           | ✓     |                                |              |                                   |                                       |
| <b>City Size 1,000 - 4,999</b> |            |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Island City                    | 1,015      |                          | ✓               |                      |                              |                                           |       | \$0.00                         | 2            | 0                                 |                                       |
| Yamhill                        | 1,020      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Yoncalla                       | 1,060      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |

| City           | Population | Last Year of Rate Change | Stormwater Fees |                      |                              |                                           |       | Avg. Monthly Household Payment | Total Miles  |                                   | Avg. EDU for Residential in (sq. ft.) |
|----------------|------------|--------------------------|-----------------|----------------------|------------------------------|-------------------------------------------|-------|--------------------------------|--------------|-----------------------------------|---------------------------------------|
|                |            |                          | No charge       | Separate utility fee | Included in wastewater rates | Paid to a join district within the county | Other |                                | Piped System | Open Channel, Ditches, and Swales |                                       |
| Joseph         | 1,090      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Athena         | 1,125      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Port Orford    | 1,135      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Riddle         | 1,185      |                          |                 | ✓                    |                              |                                           |       | \$0.75                         |              |                                   | 1,000                                 |
| Cascade Locks  | 1,200      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Gold Hill      | 1,220      | 2014                     |                 | ✓                    |                              |                                           |       | \$1.50                         |              |                                   |                                       |
| Siletz         | 1,290      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Heppner        | 1,290      |                          |                 |                      |                              |                                           | ✓     | \$0.00                         |              |                                   |                                       |
| Dunes City     | 1,310      |                          |                 |                      |                              |                                           | ✓     | \$0.00                         | N/A          | N/A                               | N/A                                   |
| Bay City       | 1,310      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Rockaway Beach | 1,325      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Culver         | 1,370      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Depoe Bay      | 1,405      | 2014                     |                 |                      |                              |                                           | ✓     | \$0.00                         |              |                                   |                                       |
| Gearhart       | 1,465      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Hines          | 1,565      |                          |                 |                      |                              |                                           |       |                                | 13           | 0                                 | 1,500                                 |
| La Pine        | 1,670      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Brownsville    | 1,670      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Lakeside       | 1,705      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Clatskanie     | 1,729      | 2008                     |                 | ✓                    |                              |                                           |       | \$5.50                         | 4            | 0.4                               | 0                                     |
| John Day       | 1,745      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |

| City          | Population | Last Year of Rate Change | Stormwater Fees |                      |                              |                                           |       | Avg. Monthly Household Payment | Total Miles  |                                   | Avg. EDU for Residential in (sq. ft.) |
|---------------|------------|--------------------------|-----------------|----------------------|------------------------------|-------------------------------------------|-------|--------------------------------|--------------|-----------------------------------|---------------------------------------|
|               |            |                          | No charge       | Separate utility fee | Included in wastewater rates | Paid to a join district within the county | Other |                                | Piped System | Open Channel, Ditches, and Swales |                                       |
| Banks         | 1,785      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Irrigon       | 1,835      |                          |                 |                      |                              |                                           |       |                                | 22           | N/A                               | N/A                                   |
| Columbia City | 1,945      |                          | ✓               |                      |                              |                                           |       |                                |              |                                   |                                       |
| Vale          | 1,976      | >10 yrs. ago             | ✓               |                      |                              |                                           |       |                                |              |                                   |                                       |
| Waldport      | 2,080      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Rogue River   | 2,145      |                          |                 |                      |                              |                                           |       |                                | Unknown      | Unknown                           |                                       |
| Union         | 2,240      |                          |                 |                      |                              |                                           |       |                                | 0            | N/A                               | N/A                                   |
| Vernonia      | 2,450      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Lakeview      | 2,490      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Gervais       | 2,520      | 2013                     |                 | ✓                    |                              |                                           |       | \$5.00                         |              | 1                                 |                                       |
| Myrtle Point  | 2,525      |                          |                 |                      |                              |                                           |       |                                | 4.2          | 1                                 | N/A                                   |
| Jacksonville  | 2,840      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Estacada      | 2,880      | 2014                     |                 | ✓                    |                              |                                           |       | \$5.95                         | 18           | 2                                 | 2,500                                 |
| Bandon        | 3,100      |                          | ✓               |                      |                              |                                           |       | \$0.00                         | 8            | 23                                | 2,500                                 |
| Nyssa         | 3,200      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Mt. Angel     | 3,300      |                          | ✓               |                      |                              |                                           |       |                                | 11           | 2.5                               | Unknown                               |
| Boardman      | 3,405      |                          |                 |                      |                              |                                           |       | \$0.00                         |              |                                   |                                       |
| Toldeo        | 3,465      |                          |                 |                      |                              |                                           |       |                                | 7            | 6                                 | N/A                                   |
| Aumsville     | 3,750      |                          |                 |                      |                              |                                           |       |                                | 6            | 1                                 |                                       |
| Coquille      | 3,865      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |



| City                           | Population | Last Year of Rate Change | Stormwater Fees |                      |                              |                                           |       | Avg. Monthly Household Payment | Total Miles  |                                   | Avg. EDU for Residential in (sq. ft.) |
|--------------------------------|------------|--------------------------|-----------------|----------------------|------------------------------|-------------------------------------------|-------|--------------------------------|--------------|-----------------------------------|---------------------------------------|
|                                |            |                          | No charge       | Separate utility fee | Included in wastewater rates | Paid to a join district within the county | Other |                                | Piped System | Open Channel, Ditches, and Swales |                                       |
| Wood Village                   | 3,875      | 2014                     |                 |                      |                              |                                           | ✓     | \$9.62                         | 3.7          | 0.6                               | N/A                                   |
| Phoenix                        | 4,585      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Philomath                      | 4,625      | 2012                     |                 | ✓                    |                              |                                           |       | \$1.50                         |              |                                   |                                       |
| Veneta                         | 4,635      | 2014                     |                 | ✓                    |                              |                                           |       | \$2.31                         | 13.2         | 7.8                               | 1,000 - 3,000                         |
| <b>City Size 5,000 - 9,999</b> |            |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Creswell                       | 5,031      |                          | ✓               |                      |                              |                                           |       | \$0.00                         | 15           |                                   |                                       |
| Warrenton                      | 5,050      | 2014                     |                 | ✓                    |                              |                                           |       | 10percent of sewer charge      | 18           | 20.3                              | 2,000                                 |
| Sheridan                       | 6,170      | >10 yrs. ago             |                 | ✓                    |                              |                                           |       |                                |              |                                   | 3,000                                 |
| Talent                         | 6,170      | 2006                     |                 | ✓                    |                              |                                           |       | \$3.50                         |              |                                   |                                       |
| Madras                         | 6,255      | >10 yrs. ago             | ✓               |                      |                              |                                           |       | \$0.00                         |              |                                   |                                       |
| Sutherlin                      | 7,930      |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Molalla                        | 8,200      | >10 yrs. ago             |                 | ✓                    |                              |                                           |       | \$2.00                         | 32.5         |                                   | 2,640                                 |
| Florence                       | 8,466      | 2011                     |                 | ✓                    |                              |                                           |       | \$6.20                         | 20           | 6                                 | 6,500                                 |
| Eagle Point                    | 8,575      | 2009                     |                 | ✓                    |                              |                                           |       | \$5.00                         | 24           | 4                                 | 3,000                                 |
| Independence                   | 8,585      | 2014                     |                 | ✓                    |                              |                                           |       | \$8.00                         |              |                                   |                                       |
| Sweet Home                     | 9,065      | 2006                     |                 | ✓                    |                              |                                           |       | \$1.00                         | 64           | 35                                | 3,200                                 |
| Silverton                      | 9,330      | 2013                     |                 | ✓                    |                              |                                           |       | \$1.00                         | 26           | 18                                | 3,121                                 |
| Astoria                        | 9,500      | 2013                     |                 |                      |                              |                                           |       |                                | 80           |                                   |                                       |
| Cottage Grove                  | 9,785      | 2014                     |                 | ✓                    |                              |                                           |       | \$8.52                         | 30.9         | 1.6                               | 2,650                                 |
| Sandy                          | 9,980      | 2009                     |                 | ✓                    |                              |                                           |       | \$3.25                         | Unknown      | Unknown                           | 2,750                                 |

| City                      | Population | Last Year of Rate Change | Stormwater Fees |                      |                              |                                           |       | Avg. Monthly Household Payment | Total Miles  |                                   | Avg. EDU for Residential in (sq. ft.) |
|---------------------------|------------|--------------------------|-----------------|----------------------|------------------------------|-------------------------------------------|-------|--------------------------------|--------------|-----------------------------------|---------------------------------------|
|                           |            |                          | No charge       | Separate utility fee | Included in wastewater rates | Paid to a join district within the county | Other |                                | Piped System | Open Channel, Ditches, and Swales |                                       |
| City Size 10,000 - 24,999 |            |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Gladstone                 | 11,495     |                          | ✓               |                      |                              |                                           |       | \$0.00                         |              |                                   |                                       |
| Cornelius                 | 12,161     | 2014                     |                 | ✓                    |                              |                                           |       | \$12.15                        | 19           | 0.34                              | N/A                                   |
| St. Helens                | 12,895     | 2013                     |                 | ✓                    |                              |                                           |       | \$10.47                        | 40.9         | 4                                 | 2,500                                 |
| The Dalles                | 14,400     | 2007                     |                 |                      |                              |                                           | ✓     | \$2.00                         | 42.1         | 43.4                              | 3,000                                 |
| Dallas                    | 14,800     |                          |                 |                      |                              |                                           |       |                                | 42           | 13                                | N/A                                   |
| Lebanon                   | 15,660     | 2014                     |                 | ✓                    |                              |                                           |       | \$3.09                         | 36           | 13                                | 2,700                                 |
| Troutdale                 | 16,015     | 2014                     |                 | ✓                    |                              |                                           |       | \$4.27                         |              |                                   |                                       |
| Coos Bay                  | 16,160     | 2014                     |                 |                      | ✓                            |                                           |       | N/A                            | 48           | Unknown                           | 2,820                                 |
| Pendleton                 | 16,600     | 2014                     |                 |                      | ✓                            |                                           |       |                                | 28           | 4                                 | N/A                                   |
| Sherwood                  | 18,771     | 2014                     |                 |                      |                              | ✓                                         |       | \$14.27                        | 63           | Unknown                           | 2,640                                 |
| Ashland                   | 20,295     | 2014                     |                 | ✓                    |                              |                                           |       |                                | 90           | 12                                |                                       |
| Milwaukie                 | 20,500     | 2014                     |                 | ✓                    |                              |                                           |       | \$14.89                        | 40           | 4                                 | 2,706                                 |
| Klamath Falls             | 21,200     |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Wilsonville               | 21,550     | 2014                     |                 | ✓                    |                              |                                           |       | \$5.25                         | 67.2         | N/A                               | 2,750                                 |
| Forest Grove              | 22,000     | 2013                     |                 |                      |                              | ✓                                         |       | \$7.75                         |              |                                   |                                       |
| Roseburg                  | 22,275     | 2014                     |                 | ✓                    |                              |                                           |       | \$5.50                         | 94.9         | 24                                | 3,000                                 |
| Newberg                   | 22,396     | 2014                     |                 | ✓                    |                              |                                           |       | \$7.30                         | 68           | 16                                | 2,877                                 |
| City Size 25,000 - 49,999 |            |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| West Linn                 | 25,425     | 2014                     |                 | ✓                    |                              |                                           |       | \$5.58                         | 180          | 10                                | 2,080                                 |

| City                            | Population | Last Year of Rate Change | Stormwater Fees |                      |                              |                                           |       | Avg. Monthly Household Payment | Total Miles  |                                   | Avg. EDU for Residential in (sq. ft.) |
|---------------------------------|------------|--------------------------|-----------------|----------------------|------------------------------|-------------------------------------------|-------|--------------------------------|--------------|-----------------------------------|---------------------------------------|
|                                 |            |                          | No charge       | Separate utility fee | Included in wastewater rates | Paid to a join district within the county | Other |                                | Piped System | Open Channel, Ditches, and Swales |                                       |
| Redmond                         | 26,590     | 2013                     |                 | ✓                    |                              |                                           |       | \$7.06                         | 34           | 14                                |                                       |
| Oregon City                     | 33,390     | 2014                     |                 | ✓                    |                              |                                           |       | \$8.80                         | 125          | 40                                | 2,500                                 |
| Grants Pass                     | 35,000     |                          |                 |                      |                              |                                           |       |                                | 140          | 75                                |                                       |
| Oswego                          | 36,990     | 2014                     |                 | ✓                    |                              |                                           |       | \$11.76                        | 130          |                                   | 2,640                                 |
| Tigard                          | 49,135     | 2014                     |                 | ✓                    |                              |                                           |       | \$6.00                         | 130          | 128                               |                                       |
| <b>City Size 50,000 or more</b> |            |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Albany                          | 50,720     |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Springfield                     | 59,990     | 2014                     |                 | ✓                    |                              |                                           |       | \$13.12                        | 170          | 26                                | 1,700                                 |
| Medford                         | 76,300     | 2013                     |                 | ✓                    |                              |                                           |       | \$7.71                         | 172.8        | 50.7                              | 3,730                                 |
| Bend                            | 81,000     | 2007                     |                 | ✓                    |                              |                                           |       | \$4.00                         |              |                                   | 3,800                                 |
| Hillsboro                       | 81,310     |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |
| Beaverton                       | 93,000     | 2014                     |                 | ✓                    |                              |                                           |       | \$8.75                         | 245          | N/A                               | 2,640                                 |
| Salem                           | 157,888    | 2014                     |                 |                      |                              |                                           | ✓     | \$7.43                         | 440          | 176                               | 3,000                                 |
| Portland                        | 592,120    |                          |                 |                      |                              |                                           |       |                                |              |                                   |                                       |

**Table E.2: Stormwater Onsite Management Reductions/Credits**

| City Size      | Offers Fee Reductions or Credits | Does Not Offer Fee Reductions or Credits | # of Responses |
|----------------|----------------------------------|------------------------------------------|----------------|
| <1,000         | 0                                | 4                                        | 4              |
| 1,000-4,999    | 0                                | 14                                       | 14             |
| 5,000-9,999    | 2                                | 11                                       | 13             |
| 10,000-24,999  | 6                                | 9                                        | 15             |
| 25,000-49,999  | 3                                | 2                                        | 5              |
| 50,000 or more | 3                                | 2                                        | 5              |
| All cities     | 14                               | 42                                       | 56             |

| City                       | Population | Offers Fee Reductions or Credits | Nature of Reduction/Credit | Amount of Reduction/Credit |
|----------------------------|------------|----------------------------------|----------------------------|----------------------------|
| <b>City Size &lt;1,000</b> |            |                                  |                            |                            |
| Lonerock                   | 34         |                                  |                            |                            |
| Monument                   | 130        |                                  |                            |                            |
| Idanha                     | 135        |                                  |                            |                            |
| Detroit                    | 205        |                                  |                            |                            |
| Sumpter                    | 205        |                                  |                            |                            |
| Waterloo                   | 230        |                                  |                            |                            |
| Ukiah                      | 235        |                                  |                            |                            |
| Lexington                  | 255        |                                  |                            |                            |
| Westfir                    | 255        |                                  |                            |                            |
| Nehalem                    | 280        |                                  |                            |                            |
| Sodaville                  | 310        |                                  |                            |                            |

| City          | Population | Offers Fee Reductions<br>or Credits | Nature of Reduction/Credit | Amount of<br>Reduction/Credit |
|---------------|------------|-------------------------------------|----------------------------|-------------------------------|
| Moro          | 325        |                                     |                            |                               |
| Ione          | 330        |                                     |                            |                               |
| Adams         | 350        |                                     |                            |                               |
| Scotts Mills  | 364        |                                     |                            |                               |
| Haines        | 415        |                                     |                            |                               |
| St. Paul      | 416        | No                                  |                            |                               |
| Mosier        | 433        |                                     |                            |                               |
| Rivergrove    | 445        |                                     |                            |                               |
| Huntington    | 445        |                                     |                            |                               |
| Fossil        | 475        |                                     |                            |                               |
| Gates         | 485        |                                     |                            |                               |
| Mount Vernon  | 525        |                                     |                            |                               |
| Cove          | 550        |                                     |                            |                               |
| Manzanita     | 615        |                                     |                            |                               |
| Arlington     | 619        |                                     |                            |                               |
| Weston        | 675        |                                     |                            |                               |
| Condon        | 685        |                                     |                            |                               |
| Powers        | 695        |                                     |                            |                               |
| Echo          | 705        |                                     |                            |                               |
| Yachats       | 800        | No                                  |                            |                               |
| Malin         | 815        |                                     |                            |                               |
| Merrill       | 845        |                                     |                            |                               |
| Adair Village | 850        | No                                  |                            |                               |

| City                           | Population | Offers Fee Reductions<br>or Credits | Nature of Reduction/Credit | Amount of<br>Reduction/Credit |
|--------------------------------|------------|-------------------------------------|----------------------------|-------------------------------|
| Glendale                       | 874        |                                     |                            |                               |
| Prairie City                   | 910        |                                     |                            |                               |
| Halsey                         | 917        | No                                  |                            |                               |
| Falls City                     | 950        |                                     |                            |                               |
| Oakland                        | 980        |                                     |                            |                               |
| Donald                         | 980        |                                     |                            |                               |
| <b>City Size 1,000 - 4,999</b> |            |                                     |                            |                               |
| Island City                    | 1,015      | No                                  |                            |                               |
| Yamhill                        | 1,020      |                                     |                            |                               |
| Yoncalla                       | 1,060      |                                     |                            |                               |
| Joseph                         | 1,090      |                                     |                            |                               |
| Athena                         | 1,125      |                                     |                            |                               |
| Port Orford                    | 1,135      |                                     |                            |                               |
| Riddle                         | 1,185      | No                                  |                            |                               |
| Cascade Locks                  | 1,200      |                                     |                            |                               |
| Gold Hill                      | 1,220      | No                                  |                            |                               |
| Siletz                         | 1,290      |                                     |                            |                               |
| Heppner                        | 1,290      | No                                  |                            |                               |
| Dunes City                     | 1,310      | No                                  |                            |                               |
| Bay City                       | 1,310      |                                     |                            |                               |
| Rockaway Beach                 | 1,325      |                                     |                            |                               |
| Culver                         | 1,370      |                                     |                            |                               |
| Depoe Bay                      | 1,405      |                                     |                            |                               |

| City          | Population | Offers Fee Reductions<br>or Credits | Nature of Reduction/Credit | Amount of<br>Reduction/Credit |
|---------------|------------|-------------------------------------|----------------------------|-------------------------------|
| Gearhart      | 1,465      |                                     |                            |                               |
| Hines         | 1,565      |                                     |                            |                               |
| La Pine       | 1,670      |                                     |                            |                               |
| Brownsville   | 1,670      |                                     |                            |                               |
| Lakeside      | 1,705      |                                     |                            |                               |
| Clatskanie    | 1,729      | No                                  |                            |                               |
| John Day      | 1,745      |                                     |                            |                               |
| Banks         | 1,785      |                                     |                            |                               |
| Irrigon       | 1,835      |                                     |                            |                               |
| Columbia City | 1,945      |                                     |                            |                               |
| Vale          | 1,976      | No                                  |                            |                               |
| Waldport      | 2,080      |                                     |                            |                               |
| Rogue River   | 2,145      |                                     |                            |                               |
| Union         | 2,240      |                                     |                            |                               |
| Vernonia      | 2,450      |                                     |                            |                               |
| Lakeview      | 2,490      |                                     |                            |                               |
| Gervais       | 2,520      | No                                  |                            |                               |
| Myrtle Point  | 2,525      |                                     |                            |                               |
| Jacksonville  | 2,840      |                                     |                            |                               |
| Estacada      | 2,880      | No                                  |                            |                               |
| Bandon        | 3,100      | No                                  |                            |                               |
| Nyssa         | 3,200      |                                     |                            |                               |
| Mt. Angel     | 3,300      | No                                  |                            |                               |

| City                           | Population | Offers Fee Reductions<br>or Credits | Nature of Reduction/Credit                                              | Amount of<br>Reduction/Credit |
|--------------------------------|------------|-------------------------------------|-------------------------------------------------------------------------|-------------------------------|
| Boardman                       | 3,405      |                                     |                                                                         |                               |
| Toldeo                         | 3,465      |                                     |                                                                         |                               |
| Aumsville                      | 3,750      |                                     |                                                                         |                               |
| Coquille                       | 3,865      |                                     |                                                                         |                               |
| Wood Village                   | 3,875      | No                                  |                                                                         |                               |
| Phoenix                        | 4,585      |                                     |                                                                         |                               |
| Philomath                      | 4,625      | No                                  |                                                                         |                               |
| Veneta                         | 4,635      | No                                  |                                                                         |                               |
| <b>City Size 5,000 - 9,999</b> |            |                                     |                                                                         |                               |
| Creswell                       | 5,031      | No                                  |                                                                         |                               |
| Warrenton                      | 5,050      | No                                  |                                                                         |                               |
| Sheridan                       | 6,170      | No                                  |                                                                         |                               |
| Talent                         | 6,170      | No                                  |                                                                         |                               |
| Madras                         | 6,255      | No                                  |                                                                         |                               |
| Sutherlin                      | 7,930      |                                     |                                                                         |                               |
| Molalla                        | 8,200      | No                                  |                                                                         |                               |
| Florence                       | 8,466      | No                                  |                                                                         |                               |
| Eagle Point                    | 8,575      | No                                  |                                                                         |                               |
| Independence                   | 8,585      | No                                  |                                                                         |                               |
| Sweet Home                     | 9,065      | Yes                                 | Any option the applicant can show that stormwater doesn't enter system. | \$0.20                        |
| Silverton                      | 9,330      | No                                  |                                                                         |                               |
| Astoria                        | 9,500      |                                     |                                                                         |                               |
| Cottage Grove                  | 9,785      | Yes                                 | Case by case basis                                                      |                               |



| City                             | Population | Offers Fee Reductions or Credits | Nature of Reduction/Credit                                                                                                                                            | Amount of Reduction/Credit                                          |
|----------------------------------|------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Sandy                            | 9,980      | No                               |                                                                                                                                                                       |                                                                     |
| <b>City Size 10,000 - 24,999</b> |            |                                  |                                                                                                                                                                       |                                                                     |
| Gladstone                        | 11,495     | No                               |                                                                                                                                                                       |                                                                     |
| Cornelius                        | 12,161     | Yes                              | SDF Credit                                                                                                                                                            |                                                                     |
| St. Helens                       | 12,895     | Yes                              | Waived/Case by case basis                                                                                                                                             | varies                                                              |
| The Dalles                       | 14,400     | Yes                              | Developments that construct and operate private stormwater systems which do not now nor are ever intended to discharge to City system receive stormwater fee credits. | 100 percent                                                         |
| Dallas                           | 14,800     |                                  |                                                                                                                                                                       |                                                                     |
| Lebanon                          | 15,660     | No                               |                                                                                                                                                                       |                                                                     |
| Troutdale                        | 16,015     | No                               |                                                                                                                                                                       |                                                                     |
| Coos Bay                         | 16,160     | No                               |                                                                                                                                                                       |                                                                     |
| Pendleton                        | 16,600     | No                               |                                                                                                                                                                       |                                                                     |
| Sherwood                         | 18,771     | Yes                              | Listed in code                                                                                                                                                        | Varies                                                              |
| Ashland                          | 20,295     | No                               |                                                                                                                                                                       |                                                                     |
| Milwaukie                        | 20,500     | Yes                              | No runoff, reduced charge                                                                                                                                             | \$7.45                                                              |
| Klamath Falls                    | 21,200     |                                  |                                                                                                                                                                       |                                                                     |
| Wilsonville                      | 21,550     | No                               |                                                                                                                                                                       |                                                                     |
| Forest Grove                     | 22,000     | No                               |                                                                                                                                                                       |                                                                     |
| Roseburg                         | 22,275     | No                               |                                                                                                                                                                       |                                                                     |
| Newberg                          | 22,396     | Yes                              | Adjustment is made for sites that provide water quality/quantity facilities constructed above current design standards                                                | 10 percent to 20 percent on storm bill depending on facility design |

| City                             | Population | Offers Fee Reductions or Credits | Nature of Reduction/Credit                                                                                                                   | Amount of Reduction/Credit |
|----------------------------------|------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>City Size 25,000 - 49,999</b> |            |                                  |                                                                                                                                              |                            |
| West Linn                        | 25,425     | Yes                              | Reduction for onsite stormwater improvements                                                                                                 | TBD                        |
| Redmond                          | 26,590     | No                               |                                                                                                                                              |                            |
| Oregon City                      | 33,390     | No                               |                                                                                                                                              |                            |
| Grants Pass                      | 35,000     |                                  |                                                                                                                                              |                            |
| Oswego                           | 36,990     | Yes                              | Self-management of storm system                                                                                                              | 50percent                  |
| Tigard                           | 49,135     | Yes                              | If a customer can show that there is no runoff from his/her property, then there is no charge to the customer                                | No charge                  |
| <b>City Size 50,000 or more</b>  |            |                                  |                                                                                                                                              |                            |
| Albany                           | 50,720     |                                  |                                                                                                                                              |                            |
| Springfield                      | 59,990     | No                               |                                                                                                                                              |                            |
| Medford                          | 76,300     | Yes                              | 30percent reduction in amount charged per ERU                                                                                                | \$2.30 reduction per ERU   |
| Bend                             | 81,000     | Yes                              | For commercial customers that contain stormwater onsite, credit is given by reduction in impervious area calculation -- must be documentable | Varies                     |
| Hillsboro                        | 81,310     |                                  |                                                                                                                                              |                            |
| Beaverton                        | 93,000     | No                               |                                                                                                                                              |                            |
| Salem                            | 157,888    | Yes                              | Reduction of billed impervious area from 5 to 55percent of total area                                                                        | 5 to 55 percent            |
| Portland                         | 592,120    |                                  |                                                                                                                                              |                            |