



# **Establishing a Stormwater Rate**

## **Final Report**

**October 5, 2010**

## Acknowledgements

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## ABBREVIATIONS

CIP .....	Capital Improvement Project
COSA .....	Cost of Service Analysis
DEQ .....	Oregon State Department of Environmental Quality
EDU .....	Equivalent Dwelling Unit
EPA .....	U.S. Environmental Protection Agency
GIS .....	Geographic Information System
M .....	Million
NPDES .....	National Pollutant Discharge Elimination System
SDC .....	System Development Charge
SFR .....	Single-Family Residential
SW .....	Stormwater
W .....	Water
WW .....	Wastewater
W/WWTF .....	Water/Wastewater Task Force

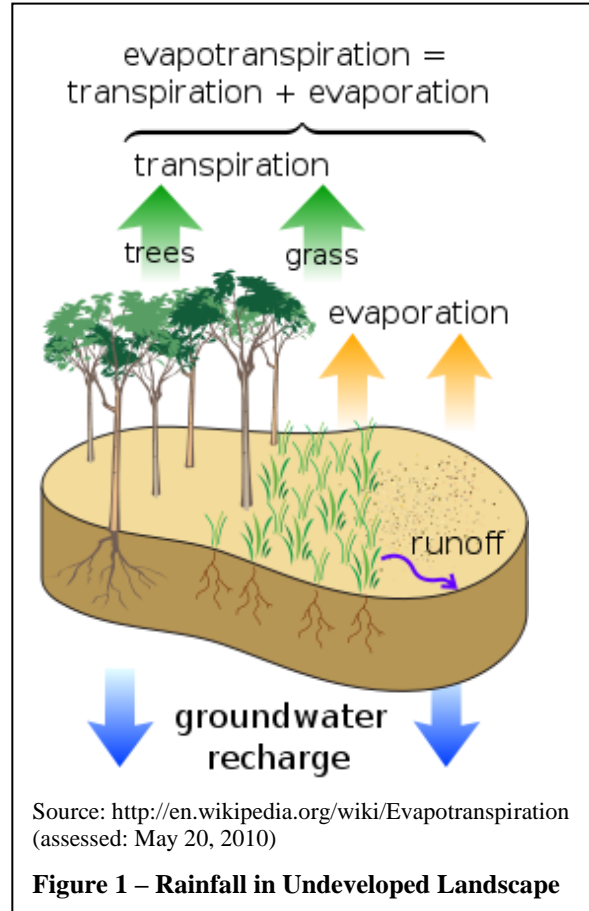
**CHAPTER 1. INTRODUCTION**

***Urban Stormwater Runoff***

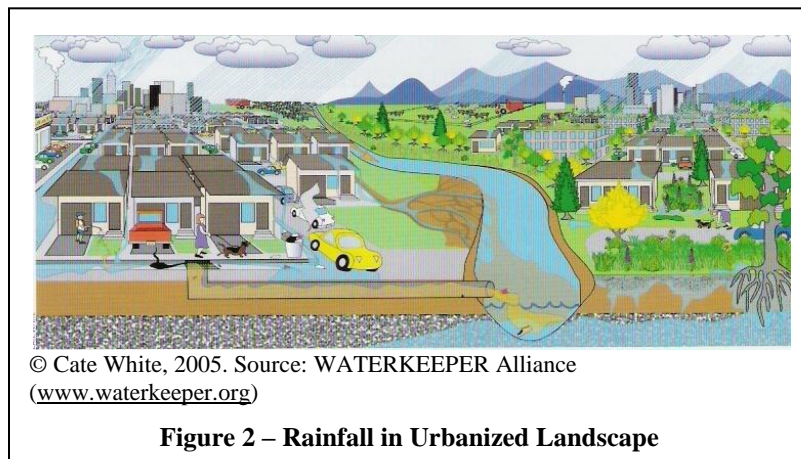
When rain falls on natural landscapes typical in many parts of Oregon’s Willamette Valley, most of the rainfall is intercepted by trees and vegetation, where it evaporates or is transpired, a process known collectively as evapotranspiration, or it is absorbed into the ground through the process of infiltration (shown as “groundwater recharge” in Figure 1). As shown in Figure 1, only a relatively small portion of rainfall on natural landscapes becomes surface runoff.

As the natural landscape is developed and urbanized, the processes of evapotranspiration and infiltration are altered. The amount of rainfall undergoing evapotranspiration is reduced as trees and other vegetation are removed. Additionally, infiltration of rainfall into the ground is impeded by the introduction of new impervious surfaces such as rooftops, roads, parking areas, and highly compacted soils.

When rain falls on urbanized landscapes, the amount of rainfall becoming runoff is significantly higher than runoff from natural landscapes—both in terms of the volume of flow and the rate at which the flows occur. This increase in urban stormwater runoff can damage urban creeks and waterways by eroding stream banks, cutting into stream channels, and damaging aquatic habitats.



**Figure 1 – Rainfall in Undeveloped Landscape**



**Figure 2 – Rainfall in Urbanized Landscape**

During more extreme storm events, urban stormwater runoff can cause flooding that threatens property, public health, and safety.

High flows are only a part of the problem caused by increases in impervious surface areas and reductions in vegetative cover. Stormwater runoff can also pick up gasoline, oil, pesticides, fertilizers, pet wastes, and many other pollutants that have been

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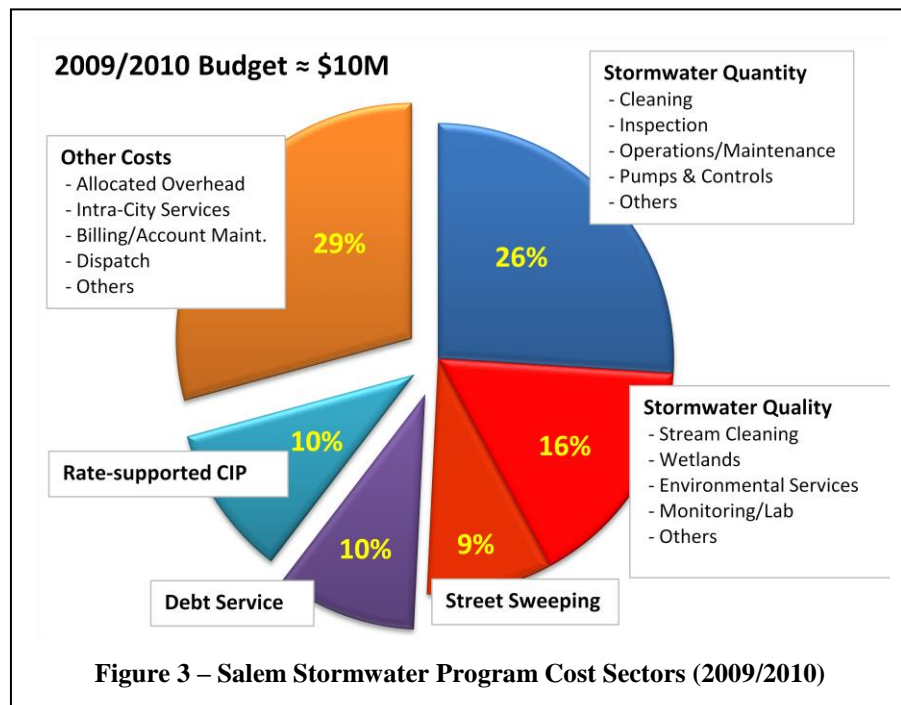
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deposited on impervious surfaces. Unlike wastewater<sup>1</sup> from our homes and businesses, which is treated before being released into the Willamette River, stormwater runoff in Salem is discharged largely untreated directly into the receiving water bodies. As shown in Figure 2, pollutants in stormwater runoff are carried into our creeks, our wetlands, our groundwater, and the Willamette River.

In summary, urban stormwater runoff occurs when vegetative cover is reduced and the amount of impervious surface area is increased. These alterations from natural, undeveloped landscapes result in increased stormwater runoff flow rates and flow volumes. This runoff can damage the environment and cause flooding. Urban stormwater runoff also picks up and conveys pollutants deposited on the impervious surfaces, which can degrade aquatic environments. Thus, urban stormwater runoff creates problems related to both stormwater *quantity* and stormwater *quality*.

### ***Salem's Stormwater Program***

Throughout the country, urban areas like Salem have established stormwater management programs to address stormwater quantity and stormwater quality. Salem's Stormwater Program contains a suite of activities and projects, such as: stormwater system operation and maintenance, stormwater quality monitoring, public education and involvement, street sweeping, stream cleaning, municipal regulations, stormwater quality complaint response, inspections, capital projects, and more. As Figure 3 shows, Salem invested approximately \$10 million in the 2009/2010 fiscal year toward its Stormwater Program. Including street sweeping, approximately one-half of this amount was directed toward addressing issues related to stormwater quantity and stormwater quality.



**Figure 3 – Salem Stormwater Program Cost Sectors (2009/2010)**

Ten percent was directed toward stormwater quantity and quantity capital improvement projects (CIPs) and ten percent to debt service of past CIPs. The remaining amount was dedicated to shared operating costs such as contingency funds, insurance, billing, information technology, and others. Many facets of our Stormwater Program are mandated by the federal Clean Water Act,

<sup>1</sup> Note: “wastewater” and “sewer” are used interchangeably throughout this report.

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which requires that cities like Salem be issued a permit to discharge runoff from our municipal stormwater system. Known as a National Pollutant Discharge Elimination System (NPDES) permit, it is administered on behalf of the federal Environmental Protection Agency (EPA) through the Oregon State Department of Environmental Quality (DEQ). Over time, the requirements contained in Salem’s NPDES Municipal Stormwater Discharge Permit will continue to grow, requiring an increase in investment into our Stormwater Program.

### ***Current Funding for Salem’s Stormwater Program***

Historically, Salem’s Stormwater Program-related costs have been recovered through the City’s wastewater rates. The rates paid by our wastewater customers are derived from a detailed Cost of Service Analysis (COSA), which is conducted periodically by Salem Public Works and Administrative Services Departments. The purpose of the COSA is to establish a wastewater rate that is based on the cost of delivering the services by the City and the level of services used by our ratepayers. Water and wastewater financial plans are updated every two years to establish utility rates for both services and the City Council approves adjustments to water and wastewater rates that are made every year with the January billing cycle.

For most ratepayers, the wastewater rate is calculated using a combination of a small fixed sewer user charge and an added factor based on water consumption during the winter months. The underlying premise of this method for setting wastewater rates is that it is reasonable to presume that there is little irrigation or lawn watering during the winter months and that the water being brought into a property during the winter months of November through February eventually leaves by way of the wastewater system.

A small number of our wastewater ratepayers, industrial food processors for example, pay a significantly higher rate for their wastewater discharges. This higher rate accounts for the fact that these ratepayers have pollutants in their wastewater that are not typically present in wastewater discharges from residential and commercial properties. Because these industrial ratepayers present a greater pollutant load to the wastewater treatment system, they pay a correspondingly higher wastewater rate. Wastewater discharges from industrial ratepayers are also measured throughout the year (in contrast to using only winter-based flow volumes, as is done for most non-industrial ratepayers).

Currently, a portion of the funds received from our wastewater ratepayers goes toward Salem’s existing Stormwater Program. As shown in Figure 4, during fiscal year 2009/2010, approximately

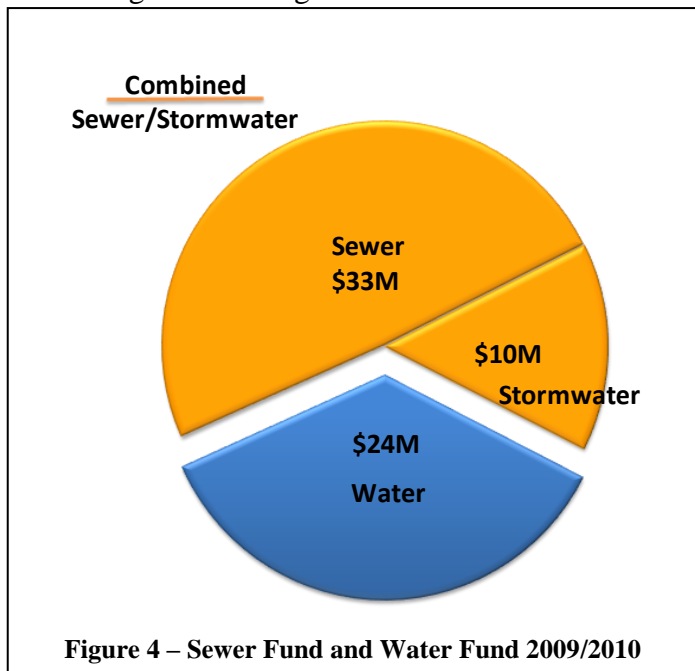


Figure 4 – Sewer Fund and Water Fund 2009/2010

\$43M was received from wastewater ratepayers, of which approximately \$10M was used to fund

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the City’s Stormwater Program. The relative amount of the wastewater rate that goes toward stormwater varies between various categories of ratepayers, as illustrated in Table 1. The values shown in this table are based on a sampling of 2009/2010 bills and are provided for illustrative purposes.

The residential ratepayer in this illustrative example uses 800 cubic feet of water per month, which is approximately 200 gallons per day. The impervious surface area of 3,000 square feet is an average area for residential properties in Salem and includes the footprint of the house, any outbuildings (such as sheds and detached garages), and all walkways and driveways. Of the total residential monthly bill of \$47, about one-third goes to support stormwater and the remaining two-thirds to wastewater programs. The two commercial customers shown in Table 1 illustrate how a 50% increase in average water use (from 40 to 60 cubic feet per month) will result in a 50% increase in the wastewater portion of the utility bill (\$209 to \$302), but a relatively modest 26% increase (\$27 to \$35) in the stormwater portion. The eight-fold increase in impervious surface area between the two commercial customers is not reflected in the current wastewater rate structure. Industrial rates vary significantly among different industries owing to variations in processes and facilities. The industrial example in Table 1 is based on a specific business and illustrates how industrial ratepayers pay a significantly higher rate than other ratepayers owing to the higher sewage strength in these wastewater discharges. The representative sampling of the four customer types provided in Table 1 will be used throughout this report.

**Table 1 - Current Contributions of Sewer Rate to Stormwater Program**

Customer Type	Average Water Use (100 ft <sup>3</sup> /mo)	Impervious Area (ft <sup>2</sup> )	Typical Current Wastewater + Stormwater Bill	Portion of Current Bill to Stormwater	Portion of Current Bill to Wastewater
Residential – Average	8	3,000	\$47	\$15	\$32
Commercial – Small	40	25,000	\$209	\$27	\$182
Commercial – Large	60	200,000	\$302	\$34	\$268
Industrial – Large	110	430,000	\$61,000	\$3,955	\$58,277

### ***Proposed Future Funding for Salem’s Stormwater Program***

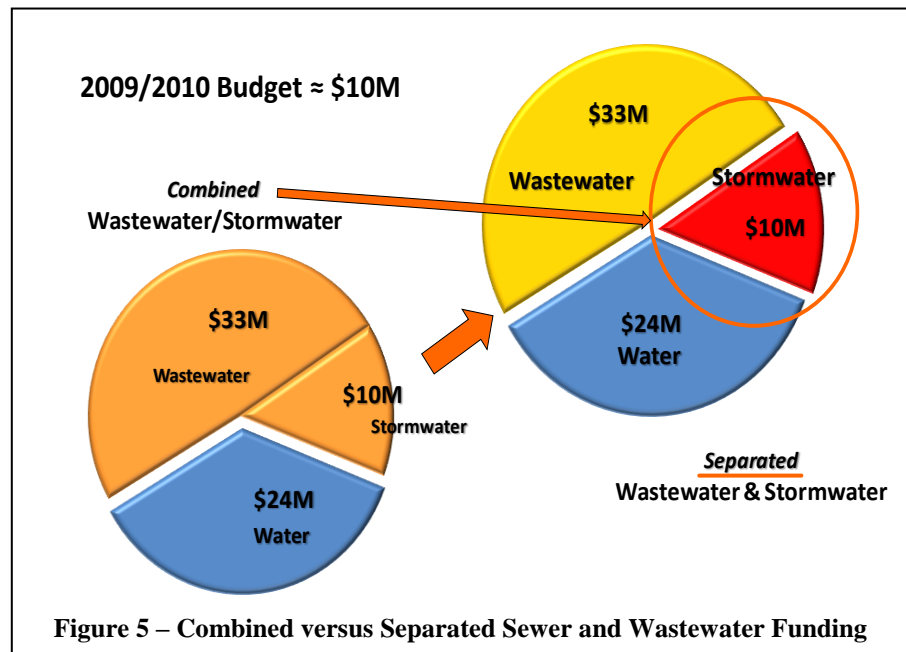
Beginning in 2009, the Salem Public Works Department began investigating alternative funding options for its stormwater programs. At issue was the long-standing acknowledgement that there was a need to more closely align the stormwater rates paid by Salem’s ratepayers to the stormwater services received by the ratepayers. In the case of water ratepayers, for example, the water rates are based on the relationship between the water received by the ratepayer and the COSA for water that determined the cost to the City for delivering water to our water customers.

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Wastewater rates, excluding the stormwater portion, are similarly based on the cost of service. Although the Stormwater Program is funded through the wastewater rates, there is very little relationship between the amount of water a property uses (which establishes the wastewater rate for most properties), the impacts that property has on the stormwater system, or the stormwater services provided to the ratepayer. As discussed earlier, it is the replacement of the natural, undeveloped landscape with impervious surface that most influences the stormwater characteristics of a property. Additionally, because the current wastewater rate structure is based on water usage, there is no opportunity to provide credit for a ratepayer who has implemented measures to reduce the property's stormwater impacts by, for example, replacing impervious surfaces with vegetation.

As shown in Figure 5, Salem Public Works Department staff is recommending that the current funding linkage between wastewater rates and the City's Stormwater Program be decoupled and a separate stormwater rate be developed that is specifically designed to fund the Stormwater Program. The wastewater rates will remain tied to the cost of providing wastewater services to each customer. The new stormwater rate will be based on each property's stormwater impacts, and the property's impervious surface area will be used as a surrogate measure of these stormwater impacts.



It is important to note that this proposal to initially establish a stormwater rate does not involve significantly increasing the scale, scope, or budget for the City's Stormwater Program beyond what would be required to account for annual inflationary adjustments or increases in regulatory requirements. Should the proposal to establish a stormwater rate not be approved, the City will continue to have its Stormwater Program and will continue funding it as necessary through wastewater rates. It is also important to recognize that we fully expect the City's Stormwater Program to grow with time as regulatory obligations and ratepayer expectations increase. At issue, and the subject of this report, is whether Salem's Stormwater Program will be funded by the City's wastewater ratepayers (based on water usage) or by the City's stormwater ratepayers (based on impervious surface).

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### ***Overview of Report***

This report, prepared and submitted by Public Works staff, discusses the proposed stormwater rate in detail. It begins by providing answers to frequently asked questions about urban stormwater runoff and the proposed stormwater rate. A summary of the key principles of the proposed stormwater rate and the general methodology used to establish a stormwater rate structure based on impervious surface area is then presented in detail. This is followed by a discussion of various alternatives available within this structure for setting stormwater rates and options for implementing the stormwater rate over time. A program for providing a stormwater rate reduction credit program is then described. This report concludes with the final staff recommendation. In the appendices are additional details and calculations used to formulate the rate, as well as supplemental material to support the proposal.

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## CHAPTER 2. FREQUENTLY ASKED QUESTIONS

### ***What is the concern about stormwater quantity and quality?***

Stormwater quantity and quality are affected by our use of the land. Stormwater runoff volumes and flow rates increase as vegetation and soils are removed and replaced by large amounts of impervious surface. The higher flows can damage aquatic environments in our urban creeks and cause flooding. Additionally, the pollutants we generate can be carried off by stormwater runoff into our streams, lakes, and the Willamette River. These pollutants include dirt, toxic chemicals, oils, nutrients, soap, and bacteria that can come from a variety of sources including pet waste, vehicles, roadways, parking lots, landscaping chemicals, certain business practices, and construction activities.

### ***Why is Salem pursuing implementation of a stormwater rate?***

Currently, a portion of every wastewater ratepayer's fee is used to fund Salem's Stormwater Program. Wastewater rates are a function of water usage and there is very little relationship between the amount of water a property uses and impacts that property has on stormwater quality or quantity. The purpose of implementing a stormwater rate is to ensure Salem's Stormwater Program is funded in a manner that is fair, equitable, and sustainable. This requires that we more closely align the stormwater rates that each resident, business, or industrial property owner pays with the impacts that property has on Salem's stormwater system and on the receiving creeks, lakes, and Willamette River.

### ***Why implement a stormwater rate now?***

Over the past ten years, Salem has been constructing a series of capital projects to improve and enhance our wastewater treatment capabilities. These efforts, which have been funded by the City's wastewater ratepayers, are largely completed. Additionally, in the past, the City's Stormwater Program funding was a relatively small percentage of the total wastewater fund. The percentage has grown and, owing to increasing state and federal regulatory requirements, this percentage is expected to rise over time. Based on all these factors, it is both timely and appropriate to evaluate ways to improve the manner in which wastewater and stormwater services are funded. As a result, and on the advice of the Water/Wastewater Task Force,<sup>2</sup> the staff has determined that now is the time to decouple stormwater funding from wastewater rates and establish a specific stormwater rate structure.

### ***How will the stormwater rate be developed?***

The stormwater rate will be based on the amount of a property's impervious area, which is considered a reasonable surrogate measure of the impacts the property has on stormwater runoff quantity and quality. Based on the total amount of impervious surface in Salem and the overall Stormwater Program budget, a dollar cost per unit of impervious surface will be established. All

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<sup>2</sup> The Water/Wastewater Task Force is the advisory body to the Public Works Director in matters related to utility rates and policies.

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single-family residential (SFR) ratepayers will pay one of three set rates, which will depend on the size of the house and other impervious surfaces on the property. All non-SFR ratepayers will pay a stormwater rate based on the actual amount of impervious surface on the property.

### ***What is impervious surface?***

An impervious surface is any surface that prevents stormwater from infiltrating into the ground. Impervious surfaces include buildings, roofs, pavement, patios, roadways, parking lots, and nonpaved surfaces that are subject to vehicular traffic.

### ***When determining the amount of impervious surface for my property, do you include the sidewalk and the street in front of it?***

Neither sidewalks nor the fronting street are included when determining the total impervious surface area of the property in order to set the stormwater rate.

### ***Why is gravel considered an impervious instead of a pervious surface?***

All surfaces subjected to vehicular traffic, whether paved or not, are considered impervious for the purposes of establishing a stormwater rate. Automobiles and trucks moving and parking on gravel surfaces crush the rock and compact the soils to such a degree that infiltration is significantly impeded or entirely prevented.



### ***Who will be charged this new stormwater rate?***

Developed property within the Salem city limits will pay the stormwater rate, including, but not limited to: residential properties, industrial facilities, public buildings, nonprofit organizations, and businesses. City streets and streets within planned residential developments will not pay a stormwater rate. These roadways are excluded because they are designed to collect and carry stormwater runoff and are therefore considered to be part of Salem's stormwater system. In addition, property owned and operated by the City of Salem will not be subject to a stormwater rate. This is in conformance with a long-standing City Council policy that Salem's taxpayers and ratepayers will not be charged for utility services that are funded by the City's tax and ratepayers. This policy is already applied to water and wastewater services.

### ***How is the stormwater rate assessed?***

Single-family residential (SFR) properties provide the basis for the stormwater rate. Data indicate that the average amount of impervious area for a single-family Salem residence, which includes the area of the house, any outbuildings such as detached garages and sheds, walkways, and drives, is about 3,000 square feet. This area is established as equal to one equivalent dwelling unit or EDU. All non-SFR properties will pay a multiple of this base rate according to their measured impervious area. Additional details regarding the methodology for determining the stormwater rate are provided in Chapter 3.

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### ***What services will be supported by the stormwater rate?***

The Salem Public Works Department currently provides stormwater management services within a service area of over 44 square miles that includes 13 urban watersheds. The stormwater collection system consists of more than 85 miles of open channels/ditches, 90 miles of waterways, 420 miles of pipe, 800 detention basins, and 22,000 storm drainage structures. In addition to operating and maintaining this complex system, additional services provided by the City's Stormwater Program include periodic review and update of stormwater management planning documents and regulations, field inspections and enforcement of those standards, public information and education, construction of capital facilities, stormwater quality monitoring, street sweeping, and much more.

### ***Is this a new stormwater service and is it a new fee?***

This proposal does not involve creating a new service. Regardless of whether the proposal is approved for implementation or not, Salem's Stormwater Program will continue. This is also not a new fee, in that all Salem residents and businesses currently pay for the existing Stormwater Program through their wastewater bill. Rather, this proposal is intended to create a more equitable and fair way to pay for stormwater services through a specific stormwater rate rather than through existing wastewater rates.

### ***Will my bill go up?***

The proposed stormwater rate will redistribute the cost of providing stormwater services among all the ratepayers based on the amounts of their impervious surface. Accordingly, the total amount paid by our customers for wastewater will decrease when the stormwater component is removed. A new stormwater rate, based on impervious surface, will be incorporated into the billing statements. Depending on the amount of impervious surface area on the property (which will form the basis for the stormwater portion of the bill) and the amount of winter water use (from which the wastewater bill is derived), the revised bill may go up, go down, or stay essentially the same. The potential rate impacts to different customer types are illustrated in Chapter 3 and Chapter 4.

### ***Has this stormwater rate approach been used anywhere else?***

Yes. Most large and many small communities throughout the nation and Oregon have adopted a stormwater rate to fund their stormwater programs. Within Oregon, cities that have implemented this funding mechanism include: Ashland, Corvallis, Eugene, Gresham, Keizer, Medford, Roseburg, Portland, and Springfield, and the cities served by Clean Water Services.<sup>3</sup> Salem will be one of the last major metropolitan cities in the country to establish a stormwater rate.

### ***Will this money take care of the drainage problems created by new development?***

No. Every developer in Salem is currently required to provide all drainage improvements necessary to manage the runoff generated by that development. These improvements are not

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<sup>3</sup> Clean Water Services includes the cities of Beaverton, Tigard, Tualatin, Hillsboro, King City, Forest Grove, Sherwood, Cornelius, Banks, Gaston, Durham, and North Plains.

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funded by stormwater rates, but are funded and constructed by the developer. Additionally, new development pays a Stormwater System Development Charge (SDC) to connect to the City's stormwater system. All impervious area created by new development will be incorporated into the stormwater rate structure and the new property owners will become stormwater ratepayers.

### ***What will the stormwater rate be for residential properties?***

The amount of impervious surface area on most of Salem's 35,000 single-family residential (SFR) properties fits within a relatively narrow range between approximately 1,000 and 5,000 square feet. It is, therefore, not cost-effective to create a unique stormwater rate for each SFR property based on the specific amount of impervious surface area. However, even within this narrow range of SFR properties there are homes that are significantly smaller and significantly larger than the average Salem home. It was determined that a more equitable SFR rate structure would be one that provides a three-tiered system. Approximately 75 percent of all SFR properties—those with between about 2,200 and 3,700 square feet of impervious surface—will pay a rate that is based on the dollar value of one Equivalent Dwelling Unit (EDU). The upper and lower 12.5 percent of SFR properties will pay a rate slightly higher and slightly lower than the prescribed EDU rate.

### ***I currently receive a water and sewer bill. Will I get a stormwater bill as well?***

Yes. All property owners with impervious surface area will have a stormwater rate added to their utility bill. Generally, for multitenant facilities such as shopping centers and apartment complexes, the stormwater bill will be sent to the person or association responsible for the property.

### ***I have put in stormwater management facilities on my development. Am I eligible for a reduced stormwater rate?***

Yes. The proposed stormwater rate structure will provide credits for those non-SFR properties that have facilities on-site that reduce their adverse impacts to stormwater quantity and quality.

### ***Why are single-family residential properties that have taken measures to reduce their stormwater impacts not eligible for a reduced stormwater rate?***

Implementing a stormwater rate reduction credit program for single-family residential (SFR) properties would not be cost-effective. This is because there are over 35,000 separate SFR accounts, the stormwater rate for each SFR property will be less than \$10 per month, and the staff costs to implement and administer such a credit program would exceed the benefits to both the City and our stormwater ratepayers.

### ***My home/business is not connected to the City's drainage system. Therefore, why should I have to pay a stormwater rate?***

Your property may not be physically connected to the drainage system in the same manner as water or wastewater, but you and your property are still provided stormwater services. For example, the City's stormwater program improves and maintains stormwater facilities that reduce flooding risks to your property and the roads leading to it. Additionally, Salem's Stormwater Program administers design criteria and regulates development in a manner that helps control

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stormwater runoff that can impact your property, the roads on which you drive, and the establishments with which you do business. Our Stormwater Program also includes actions that reduce stormwater pollutants that can degrade our urban streams and waters, which provide benefits to all residents of Salem.

### ***How will the stormwater rate be implemented for areas outside of the city limits?***

The stormwater rate will only be implemented within the city limits. If an adjacent jurisdiction, such as Marion County or Polk County, enters into an interagency agreement with Salem for stormwater services to be provided outside the city limits, then property owners within the affected service area will be subject to a stormwater rate.

### ***Will undeveloped properties pay a stormwater rate?***

Only properties that have been substantially altered from their natural, undeveloped condition will be subject to a stormwater rate.

### ***Will developed properties that do not have water or wastewater accounts with the City still be charged a stormwater rate?***

Yes. If a property has impervious surface, it will be subject to the stormwater rate. In some cases, stormwater-only accounts will have to be established for properties that do not receive water or wastewater services from the City.

### ***Will undeveloped lots in subdivisions be assessed a stormwater rate?***

If the property has been substantially altered from its natural, undeveloped condition, then it will be subject to a stormwater rate. Alterations can include, for example, removing trees and vegetation, grading the lot, paving a driveway, and constructing a foundation.

### ***What has been the extent of public outreach regarding this proposal?***

The proposal to establish a stormwater rate was endorsed by the Water/Wastewater Task Force, the citizen advisory body for the Director of Public Works, at its December 17, 2009, meeting. Public outreach then began in January 2010, with a work session for the City Council on January 11, 2010. During the six-month period between January and June, presentations have been made to 18 Neighborhood Associations; the Salem Chamber of Commerce; Salem's Strategic Economic Development Corporation; five government agencies; at least 10 trade, business and individual corporations; and no fewer than 12 civic groups and citizen boards and committees. A website has been established at:

*<http://www.cityofsalem.net/stormwaterutility>*

The list of venues and dates of presentations is provided in Appendix A.

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### CHAPTER 3. GENERAL STORMWATER RATE METHODOLOGY

This chapter describes the general methodology used to establish a stormwater rate that is based on a property's impervious surface. The resultant range of stormwater rates for Salem is then compared to rates of other municipal agencies. Finally, the potential impacts of implementing a stormwater rate are illustrated for four representative customer types, and a three-tiered residential rate is described.

#### ***Foundational Principles***

In developing the proposal to establish a stormwater rate, Public Works staff has held that the following four foundational principles should be followed:

Fair: The stormwater rate should be developed in a manner that links the rates paid by our ratepayers with the stormwater impacts of each ratepayer's property and the costs of the stormwater services that the ratepayer receives. This principle is consistent with the way water and sewer services have been billed since the early 2000s.

Understandable: The manner in which the stormwater rate is developed and the rationale underlying its structure should be logical and easy to comprehend by our ratepayers.

Implementable: The stormwater rate should be implemented using information contained in our property and customer billing databases, and established with protocols for correcting and updating the information so that the rates can be properly applied and adjusted.

Sustainable: The stormwater rate should be developed so that its underlying structure remains constant even as it is enhanced with incremental improvements over time.

#### ***General Methodology***

The general methodology proposed for establishing Salem's stormwater rate is one commonly used by other municipalities and consists of the following three steps.

1. Determine the average impervious surface area for single-family residential (SFR) properties in Salem and set this value equal to one "Equivalent Dwelling Unit" or EDU.
2. Determine the impervious surface area for all non-SFR properties and convert each area into corresponding EDU value.
3. Determine the dollar value per EDU by summing the total number of EDUs (i.e., SFR plus non-SFR properties) and dividing this value into the total cost for Salem's Stormwater Program.

The dollar per EDU value becomes the impervious surface-based stormwater rate that is applied to each property.

These three steps are described in more detail below, with general values provided to illustrate Salem's proposed stormwater rate.

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### 1. Determine one “Equivalent Dwelling Unit” or EDU

To determine the surface area value that would become equal to one EDU, a sampling survey was conducted of 100 randomly selected SFR properties in Salem. The survey determined a statistically valid value of the total impervious surface area that included the footprint of the house and any additional outbuildings, driveway surfaces, patios, and walkways (sidewalks are not included in the SFR/EDU area determination). The results of this survey indicate that the average total amount of impervious surface for an SFR property in Salem is approximately 3,000 ft<sup>2</sup>.

### 2. Determine corresponding EDU value for non-SFR properties

Aerial photos contained in the City’s Geographic Information System (GIS) database were used to determine an EDU value for each non-SFR property in Salem. Buildings, rooftops, paved surfaces, and unpaved surface areas subject to vehicular traffic were all included in the impervious area determination. Trees, lawns, and other vegetated surfaces were not considered impervious. An example determination is provided in Figure 6, which shows a building area of approximately 15,650 ft<sup>2</sup> and a parking surface of 5,950 ft<sup>2</sup> (both of which are shaded in the figure), for a total of 22,500 ft<sup>2</sup> of impervious surface. Note that the landscaped portions of the property are not included in the impervious surface determination. For this example property, the corresponding EDU value would be:

$$(22,000 \text{ square feet}) \div (3,000 \text{ square feet per EDU}) = 7.2 \text{ EDUs}$$

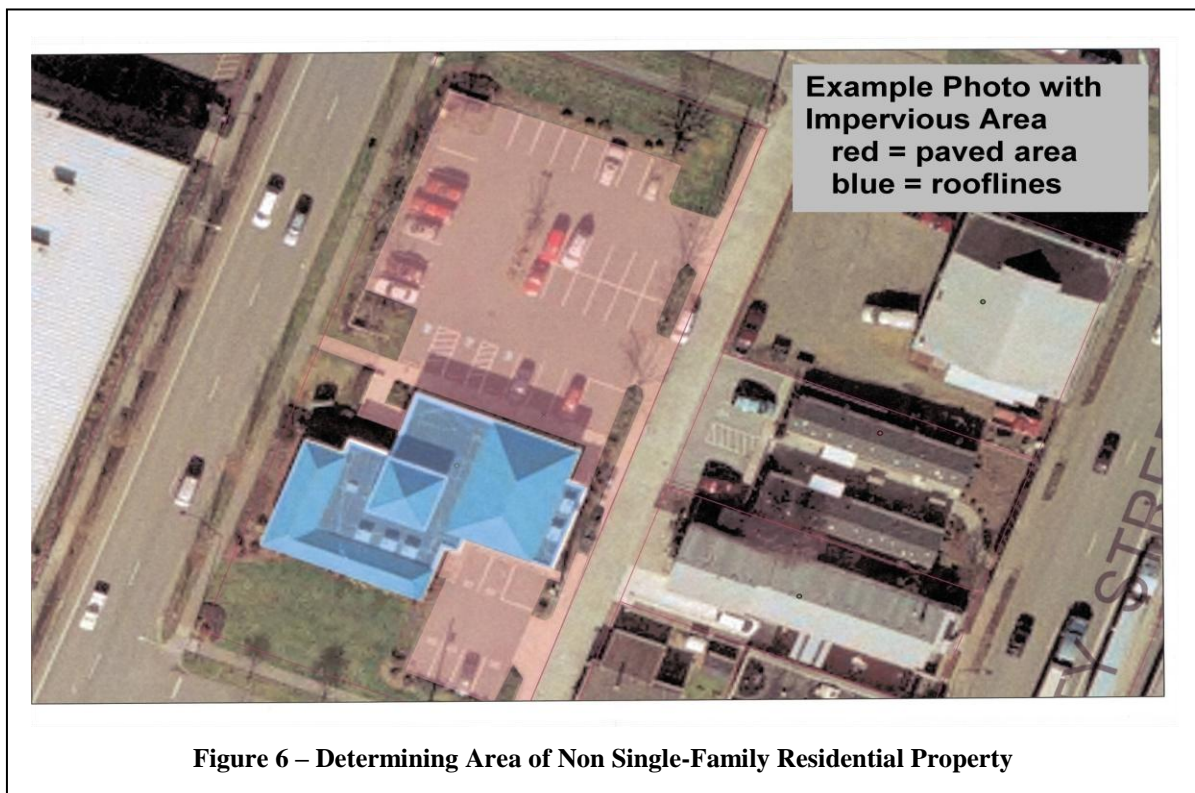


Figure 6 – Determining Area of Non Single-Family Residential Property

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### 3. Determine the dollar value per EDU.

Dividing the total number of EDUs into the annual cost for Salem’s Stormwater Program provides the dollar value per EDU. For illustrative purposes of this report, a rounded annual program cost of \$10 million is used and divided by estimated total number of EDUs of 97,000. The results are shown below:

$$\text{\$10,000,000 program cost} / \text{97,000 EDUs} = \text{\$103/EDU per year} \quad (\text{Equation 1})$$

For the property described above with an equivalent impervious surface area of 7.2 EDUs, the annual stormwater rate would be:

$$\begin{aligned} 7.2 \text{ EDUs} \times \text{\$103/EDU} &= \text{\$741.60 per year or} && (\text{Equation 2}) \\ \text{\$741.60} / 12 &= \text{\$61.75 per month} \end{aligned}$$

Staff estimates that there are between 85,000 and 105,000 total EDUs in Salem. Based on these two values, the annual stormwater rate would range between approximately \$95 and \$118 per EDU or roughly \$8 to \$10 per month for each EDU. For the purposes of this chapter and the chapter that follows, a value of \$103/EDU per year (\$8.60 per month) will be used to illustrate the features, options, and impacts of the proposed stormwater rate. The final established rate will be adopted by the Salem City Council in fall 2010.

### ***Salem’s Stormwater Rate Compared to Other Jurisdictions***

Table 2 shows how Salem’s proposed stormwater rate per EDU, which is estimated to range between approximately \$8 and \$10 per month, compares to the residential rates of stormwater utilities in other cities in our region. Not all jurisdictions shown in Table 2 use the same value of 3,000 square feet per EDU to determine rates for nonresidential ratepayers. Clean Water Services and Corvallis, for example, uses 2,500 square feet. Table 3 illustrates how Salem’s proposed rate compares to other jurisdictions for a commercial ratepayer with 100,000 square feet of impervious surface. Qualitatively, the staff believes the proposed rate is neither too high nor too low for an Oregon municipality of the size and with the responsibilities of Salem.

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**Table 2 – Salem Residential Stormwater Rate Compared to Other Jurisdictions**

City	Monthly Rate for Single Family Residence	Salem Proposed Rate per Equivalent Dwelling Unit
Keizer	\$ 3.83	
Hillsboro	\$ 4.75	
Corvallis	\$ 5.48	
Medford	\$ 5.60	
Clean Water Services <sup>4</sup>	\$ 6.25	
Vancouver	\$ 6.95	
Gresham	\$ 8.60	\$8.00
Eugene	\$ 9.82	↕
Springfield	\$ 11.32	\$10.00
Portland	\$ 21.79	

Note: Rates shown above are as of July 2010.

**Table 3 – Salem Commercial Stormwater Rate Compared to Other Jurisdictions**

City	Monthly Rate for 100,000 square feet Property	Salem Proposed Rate for 100,000 square feet Property
Keizer	\$ 123	
Hillsboro	\$ 190	
Corvallis	\$ 219	
Medford	\$ 224	
Clean Water Services <sup>1</sup>	\$ 250	\$266
Vancouver	\$ 278	↕
Gresham	\$ 344	\$333
Eugene	\$ 393	
Springfield	\$ 453	
Portland	\$ 872	

Note: Rates shown above are as of July 2010.

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<sup>4</sup> Clean Water Services includes the cities of: Beaverton, Tigard, Tualatin, Hillsboro, King City, Forest Grove, Sherwood, Cornelius, Banks, Gaston, Durham, and North Plains.

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### **Potential Impacts of Stormwater Rate**

In Chapter 1, it was shown that under the current rate structure, a portion of each wastewater ratepayers bill goes to Salem’s stormwater programs (See Table 1, page 4). If approved, the proposed rate billing approach would be to decouple the stormwater portion from what is now a combined wastewater plus stormwater bill, thereby reducing the wastewater charges while, at the same time, adding new a stormwater charge.

A key point of this proposal is that the overall budget for Salem’s Stormwater Program will not change. Keeping the same stormwater budget, but changing the manner in which stormwater rate is calculated means that among various types of ratepayers, some will pay less and others will pay more. Table 4 shows representative billing amounts for residential, commercial, and the industrial customer categories and illustrates how the total amounts would change if the proposed stormwater rate is approved. The table shows the portion of each customer’s current wastewater bill that is directed to the City’s wastewater programs and the portion that goes toward the City’s stormwater programs. When the portion of the current wastewater bill going toward the stormwater programs (based on water usage) is removed and the new stormwater rate (based on impervious surface) is added, the resultant revised bill is shown in the final column.

**Table 4 – Illustrated Impacts to Sewer and Stormwater Ratepayers (monthly rate)**

Customer Type	Impervious Area (ft <sup>2</sup> )	Typical Current Wastewater + Stormwater Bill	Portion of Current Bill to Stormwater	Portion of Current Bill to Wastewater	New Stormwater Rate	Revised Bill: Current Wastewater + New Stormwater
Residential – Average	3,000	\$47.00	\$15.00	\$32.00	\$8.60	\$40.60
Commercial – Small	25,000	\$209.00	\$27.00	\$182.00	\$71.70	\$253.70
Commercial – Large	200,000	\$302.00	\$34.00	\$268.00	\$573.30	\$841.30
Industrial – Large	430,000	\$61,000	\$3,955	\$57,045	\$1,233	\$58,277

Note: The estimates presented in Table 4 are based on 3,000 ft<sup>2</sup> per EDU and a cost of \$8.60 per month for each EDU.

The potential impacts are illustrated shown in Table 5, which compares the difference between the current and revised bills for the customers shown in Table 4 in terms of both a dollar difference and as a percent change. Based on the current proposal, when the recalculated wastewater bill is combined with the new stormwater rate, single-family residential properties will see a decrease in their monthly bill. The industrial rate payer in this example is also expected to see a decrease, large in terms of dollar but relatively small in comparison to the total combined wastewater plus stormwater bill. In contrast to residential and industrial customers, properties with relatively low water usage—and therefore, a relatively low wastewater bill—but with large amounts of impervious surface will see a significant increase in the revised

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wastewater plus stormwater utility bill. This category generally includes commercial, private institutional, and state and federal government properties.

**Table 5 – Potential Impacts to Sewer and Stormwater Ratepayers (monthly rate)**

Customer Type	Typical Current Wastewater + Stormwater Bill	Revised Bill: Current Wastewater + New Stormwater	Difference (\$)	Difference (%)
Residential – Average	\$47.00	\$40.60	Decrease \$6.40	Decrease 14%
Commercial – Small	\$209.00	\$253.70	Increase \$44.70	Increase 21%
Commercial – Large	\$302.00	\$841.30	Increase \$539.30	Increase 179%
Industrial – Large	\$61,000	\$58,277	Decrease \$2,723	Decrease 4%

Note: The estimates presented in Table 5 are based on 3,000 ft<sup>2</sup> per EDU and a cost of \$8.60 per month for each EDU.

### ***Proposed Additional Features for the Stormwater Rate***

In developing the new stormwater rate structure, two other considerations will be proposed. The first is to establish three separate rates for SFR properties and the second is to provide rate credits for non-SFR properties that have onsite structural facilities that reduce the property’s impacts on stormwater quantity or stormwater quality. These are summarized below.

#### **Three-tiered SFR Stormwater Rate**

Rather than a single stormwater rate being applied to all SFR properties, three different rates should be established. This is to account for the wide distribution of impervious surface area among the approximately 35,000 SFR accounts in Salem, as illustrated in the histogram of Figure 7. This figure is derived from the City’s GIS database, which contains the impervious surface area of the house footprint of residential properties. Seven hundred square feet have been added to the GIS-based house footprint area. This value of 700 square feet is based on a field survey of residential properties conducted in 2010 in Salem and accounts for the average impervious surface areas of driveways, walkways, outbuildings, and patios (sidewalk are not included). Figure 7 indicates that the central tendency for SFR properties in Salem is between approximately 2,500 and 3,500 square feet, with a steeply rising leg beginning at about 1,700 to 1,800 square feet and a long trailing leg that extends to SFR properties having over 6,000 square feet of total impervious surface area.

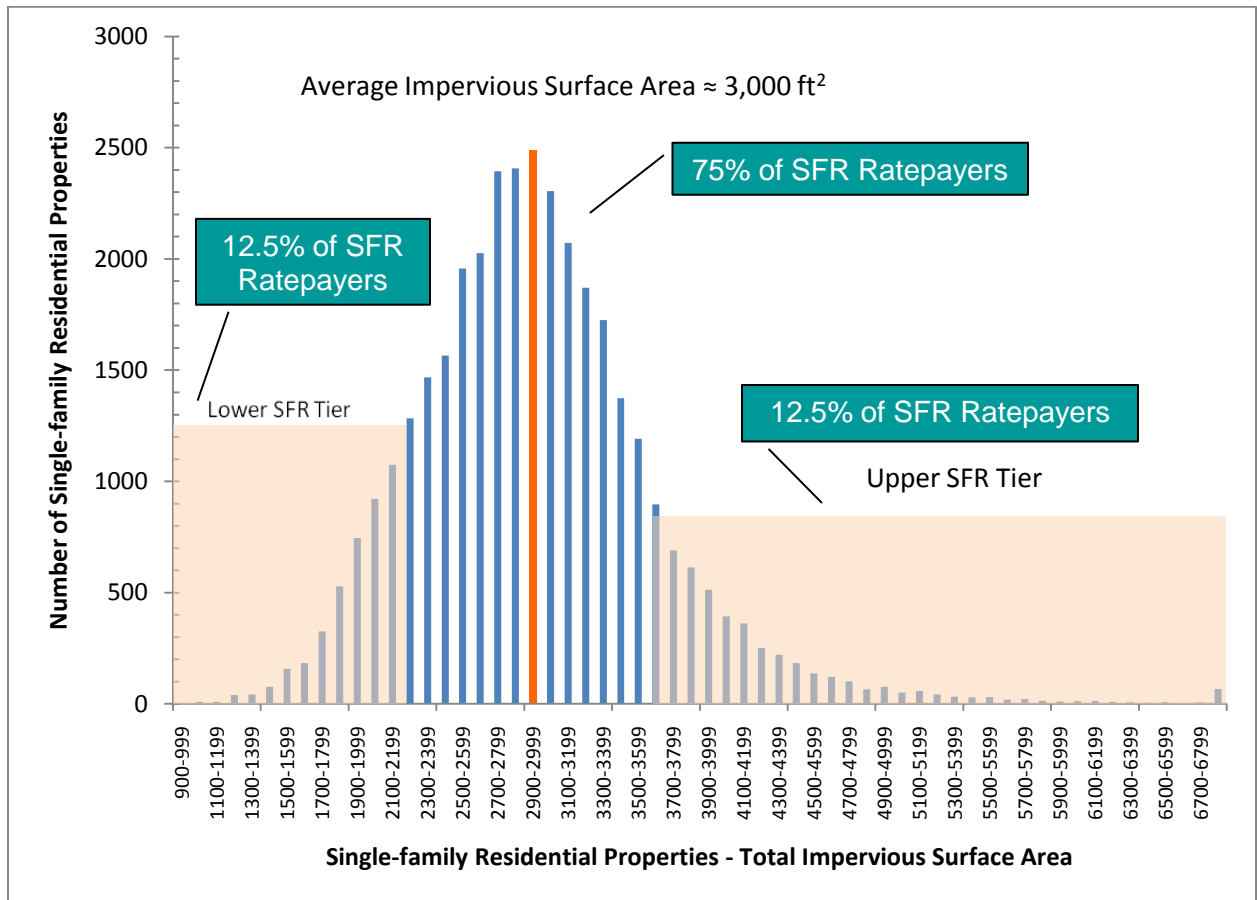
To establish a three tier rate for SFR properties, the staff propose that 75 percent of all SFR accounts pay the same residential stormwater rate. Of the remaining SFR ratepayers, those with impervious surface area in the lower 12.5 percent will pay slightly less than the average residential rate and those in the upper 12.5 percent will pay a slightly higher rate. The current proposal is that the smaller SFR properties pay a stormwater rate that is 12.5 percent

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lower than the average SFR rate and the larger properties pay a rate that is 12.5 percent higher than average. Using this approach, the three tiers for SFR rates are shown below:

Tier 1:	
Lower 12.5 percent SFR Impervious Surface Area .....	Less than 2,225 ft <sup>2</sup>
Approximate monthly stormwater rate .....	\$7.50
Tier 2:	
Average SFR Impervious Surface Area.....	2,225 ft <sup>2</sup> – 3,675 ft <sup>2</sup>
Approximate monthly stormwater rate .....	\$8.60
Tier 3:	
Upper 12.5 percent SFR Impervious Surface Area .....	More than 3,675 ft <sup>2</sup>
Approximate monthly stormwater rate .....	\$9.70



**Figure 7 – Distribution of Single-Family Residential Building Impervious Surface Area**

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### **Credits for Reducing Impacts from Impervious Surface**

If a non-SFR property has one or more structural facilities onsite designed to remove pollutants or to reduce the volume and/or rate of stormwater runoff, that property will be eligible to receive a credit that will lower its stormwater rate. The stormwater rate credit will depend on the structure, the amount of impervious surface routed to the facility, and the portion of the ratepayer's stormwater rate that is allocated to the direct costs of the stormwater quantity or stormwater quality portions of Salem's Stormwater Program. Stormwater rate credits are discussed in detail in Chapter 5.

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### CHAPTER 4. OPTIONS FOR ESTABLISHING A STORMWATER RATE

This chapter presents four options for structuring Salem's proposed stormwater rate. The first option is based entirely on the cost-per-EDU approach, the development of which was described in Chapter 3. The remaining three options are variations on this methodology, retaining impervious surface as the primary influencing factor, but incorporating options in rate setting calculations that distribute certain costs differently. The first alternative (Option 2) establishes a residential stormwater surcharge to be applied to only SFR accounts. The remaining two alternatives establish a base charge that will be applied to all stormwater accounts. For each of the four options presented, there is a discussion of the advantages, the disadvantages, and the potential impacts to representative ratepayer types. This chapter also describes timing alternatives regarding when to first implement the stormwater rate and options for phasing the new rate over time.

#### ***Option 1: EDU-only Based Stormwater Rate***

Option 1 follows from the discussion presented in Chapter 3 and represents the most straightforward application of implementing an EDU-based stormwater rate. Under Option 1, all impervious surface areas are converted to a corresponding EDU value and the *total* stormwater program budget is allocated equally across all EDUs, as was shown in Equation (1) in Chapter 3. This option results in a dollar per EDU value that can range between approximately \$8 and \$10 per EDU per month. The actual value of an EDU will be established when the Stormwater Program budget and the total number of EDUs citywide have been finalized. For illustrative purposes for this report, a monthly stormwater rate of \$8.60 per EDU will be used.

#### **Advantages of Option 1**

The principal advantage of Option 1 is that it is a simple and easy to understand method for implementing a stormwater rate. It is a fair approach to our ratepayers in that it clearly links the stormwater rate paid by the property owner to the stormwater impacts of each property, using impervious surface as the surrogate measure of stormwater impacts. Option 1 is also the most objective means for establishing an equitable stormwater rate because *all* impervious surfaces are considered the same and *all* ratepayers are treated equally. There are no subjective issues to be addressed such as disproportionality in stormwater services between ratepayers, disparity of stormwater impacts among various types impervious surfaces, or a reallocation of certain cost sectors on a per-account basis.

#### **Disadvantages of Option 1**

The main disadvantage of Option 1 is that, in comparison to the other three options, it will produce the most significant adverse cost impact to commercial ratepayers.

#### **Potential Impacts of Option 1**

Chapter 3 illustrates the potential impacts of an EDU-only approach to rate setting among various types of ratepayers. For convenience of context, Table 5 from Chapter 3 is repeated below as Table 6. This table shows that when the existing wastewater portion of the current bill is combined with the new stormwater rate, the new total is expected to increase for

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commercial properties. Analyses (not shown) conducted for some of Salem’s largest commercial properties have indicated that properties with significant amounts of impervious surface areas (on the order of 500,000 square feet or more) can expect a three- to four-fold increase in monthly wastewater plus revised stormwater bills. It is important to note that the values provided in Table 6 are intended to *illustrate* the potential impacts and do not represent either upper or lower boundaries of cost increases (or decreases).

**Table 6 – Option 1 Potential Impacts to Sewer and Stormwater Ratepayers (monthly rate)**

Customer Type	Typical Current Wastewater + Stormwater Bill	Revised Bill: Current Wastewater + New Stormwater	Difference (\$)	Difference (%)
Residential – Average	\$47.00	\$40.60	Decrease \$6.40	Decrease 14%
Commercial – Small	\$209.00	\$253.70	Increase \$44.70	Increase 21%
Commercial – Large	\$302.00	\$841.30	Increase \$539.30	Increase 179%
Industrial – Large	\$61,000	\$58,277	Decrease \$2,723	Decrease 4.5%

Note: The estimates presented in Table 6 are based on 3,000 ft<sup>2</sup> per EDU and a cost of \$8.60 per month for each EDU.

### ***Option 2: EDU-based Stormwater Rate with Residential Surcharge***

Option 2 places a fixed and permanent stormwater surcharge on each of the approximately 35,000 single-family residential (SFR) accounts. This would then lower the remaining EDU-based stormwater program cost that would be distributed among all 41,500 (i.e., both residential and non-residential) ratepayers. The rationale of Option 2 is that while a typical SFR property has a small amount of impervious surface and a correspondingly small stormwater impact, these residents nevertheless receive a benefit from Salem’s stormwater programs that is disproportionate to the rate they pay. Consider that many SFR property owners work, shop, and otherwise enjoy the amenities provided by the commercial sector of ratepayers and, therefore, could be asked to offset the stormwater rate assessed to these commercial properties that, by necessity of their business, are required to have large amounts of impervious surface areas.

To illustrate Option 2, consider an \$8.00 per month (\$96.00 per year) “residential stormwater surcharge” that will be assessed to each of Salem’s SFR accounts. Using the same general methodology described in Chapter 3, this would lower the resultant dollar per EDU value for all ratepayers as shown below in Table 7. The monthly dollar value per EDU in Option 2 for all ratepayers would decrease in this illustrative example from the \$8.60/EDU of Option 1 to \$5.70/EDU. The monthly residential stormwater rate in this illustration would be \$13.50 (\$8.00 surcharge and \$5.70 EDU charge) compared to the residential rate of Option 1 of \$8.60.

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**Table 7 – Calculations for Option 2**

Annual Stormwater Program Cost .....	\$10,000,000
Total Number of SFR Ratepayers .....	35,000
Residential Surcharge per month (for illustrative purposes only) .....	\$8.00
Residential Surcharge per year (for illustrative purposes only) .....	\$96.00

Annual Residential Surcharge Offset to Stormwater Program:

$$35,000 \text{ SFR Ratepayers} \times \$96.00/\text{Ratepayer} = \$3,360,000$$

$$\text{Remaining Stormwater Program Costs: } \$10,000,000 - \$3,360,000 = \$6,640,000$$

Revised EDU-based Stormwater Rate for all (i.e., SFR and non-SFR ratepayers):

$$\begin{aligned} \$6,640,000 \text{ remaining program cost} / 97,000 \text{ EDUs} &= \$68.45/\text{EDU per year} \\ &= \$5.70/\text{EDU per month} \end{aligned}$$

### **Advantages of Option 2**

The principal advantage of Option 2 is that by distributing a stormwater surcharge among a large number of SFR ratepayers, it mitigates the adverse impacts of implementing the stormwater rate on commercial ratepayers. Residential ratepayers would not see as significant a decrease on their revised stormwater plus wastewater bill as in Option 1 and commercial ratepayers would see less of an increase.

### **Disadvantages of Option 2**

There are several significant disadvantages to Option 2. Firstly, there is no clear or established basis for setting a “residential stormwater surcharge.” Should all residential ratepayers pay the same surcharge or should there be criteria incorporated into the surcharge based on, for example, occupational status, shopping tendencies, commuter habits, family demographics, or something else? Secondly, because determining the size of the surcharge is not a rational process but is a subjective policy decision, Option 2 could open the City’s stormwater rate setting process to question regarding equitability and fairness. Finally, there is no clear relationship between the residential stormwater surcharge, the rates paid by non-SFR ratepayers, the stormwater impacts of the property (because the surcharge is independent of impervious surface), and the benefits received by the different classes of ratepayers. Because of all these disadvantages, there is a risk inherent in Option 3 of a legal challenge regarding inequitable treatment among different ratepayer sectors.

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### Potential Impacts of Option 2

The potential impacts of Option 2 on various types of ratepayers are illustrated in Table 8. This table is based on the calculations presented above using a flat \$8.00 per month residential surcharge, which results in a revised rate of \$5.70/EDU per month. In comparing the illustrative results to Option 1 (EDU-only Based Stormwater Rate), the residential rates still decrease and commercial rates still increase, although by less in both directions. In this illustrative example, the industrial ratepayer will see a decrease in the revised bill that is slightly greater than under Option 1.

**Table 8 – Option 2 Potential Impacts to Sewer and Stormwater Ratepayers (monthly rate)**

Customer Type	Typical Current Wastewater + Stormwater Bill	Revised Bill: Current Wastewater + New Stormwater	Difference (\$)	Difference (%)
Residential – Average	\$47.00	\$45.70	Decrease \$1.30	Decrease 3%
Commercial – Small	\$209.00	\$229.54	Increase \$20.54	Increase 10%
Commercial – Large	\$302.00	\$648.30	Increase \$346.30	Increase 115%
Industrial – Large	\$61,000	\$57,862	Decrease \$3,138	Decrease 5.1%

Note: The estimates presented in Table 8 are based on 3,000 ft<sup>2</sup> per EDU, a cost of \$5.70 per month for each EDU, and a residential stormwater surcharge of \$8.00 per month.

### ***Option 3: EDU-based Stormwater Rate, Small Per-account Base Charge***

The rationale behind Option 3 is that there are certain stormwater services that provide benefits to all ratepayers independent, or largely independent, of the specific stormwater quantity or stormwater quality impacts of the ratepayer’s property. Under Option 3, these costs are shared by all ratepayers on a per-account basis. The key feature of Option 3 is that when a per-account base charge is incorporated into the stormwater rate structure, the resultant cost per EDU is lower than if an EDU-only approach (Option 1) is used. The advantage of Option 3 over Option 2 is that it retains a relationship between rates paid by all ratepayers and the services received

To develop the rate structure for Option 3, all stormwater program costs are first identified as either direct or indirect costs. This reflects standard cost allocation principles, which require that both direct costs and indirect costs be included when determining the full cost of a program.

Direct Costs: There are two types of direct costs. First, there are direct stormwater costs that are specifically related to stormwater quality and stormwater quantity. These would include such program areas as laboratory services, pumps and controls, and environmental services. Laboratory services and environmental services can be assigned entirely to stormwater quality, whereas pumps and controls can be assigned to stormwater quantity functions. Second, there are direct costs that are associated with providing specific program services to

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the stormwater ratepayers, but which are not specific to stormwater quantity or stormwater quality. This would include such program services as account maintenance and billing. Because these direct costs cannot be directly related to either a stormwater quality or stormwater quantity program function, they are assigned equally to each stormwater account independent of the amount of impervious surface of that account.

Indirect Costs: Indirect costs are program expenses that provide general support to the stormwater programs, such as casualty insurance and legal support. Indirect stormwater program costs are allocated proportionately between stormwater quality, stormwater quantity, and per account. As an example, consider “Allocated Overhead,” which includes support services such as information technology, legal, and risk management. The stormwater rate’s share of this indirect cost center is approximately \$200,000 per year. After all direct costs have been identified the Stormwater Program Budget shows that 40 percent of the direct costs go to stormwater quality functions, 40 percent to stormwater quantity functions, and 20 percent on a per-Account basis. The \$200,000 indirect cost for Intra-city Services would be allocated as follows:

Stormwater Quality (per EDU).....	40 percent of \$200,000 or \$80,000
Stormwater Quantity (per EDU).....	40 percent of \$200,000 or \$80,000
Account-based Charge (per Account).....	20 percent of \$200,000 or \$40,000

Table 9 lists the key Stormwater Program cost centers, indicates whether the cost is considered a direct or an indirect cost (or, in the case of “Non-Divisional” costs, both), and further indicates how each cost would be allocated between stormwater quantity, stormwater quality, and per account rates.

Note that in Table 9, “Street Sweeping” would be allocated entirely to stormwater quality under Option 3 and “Dispatch Services” would be allocated proportionately between stormwater quality and stormwater quantity. These two direct costs would be allocated 100 percent on a per account charge under Option 4.

### **Advantages of Option 3**

The main advantage of Option 3 in comparison to Option 1 is to the commercial sector. Although commercial customer rates will still increase significantly with the implementation of the new stormwater rate structured as described in Option 3, the size of the increase is somewhat lower for this sample set, as shown in Table 11. The primary advantage of this option over Option 2 is that it retains a relationship between the stormwater rate paid by the ratepayers and the stormwater services received by the ratepayers.

### **Disadvantages of Option 3**

One of the disadvantages of Option 3 in comparison to Option 1 is that residential ratepayers will see a lower reduction in rates than they would under Option 1 (EDU-only Stormwater Rate). Another disadvantage of Option 3 is that the methodology for establishing this type of stormwater rate is more complicated than either Option 1 or Option 2 (EDU-based Stormwater Rate with Residential Surcharge). Although not insurmountable, this does make the stormwater rate and its basis more difficult to explain to our customers.

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**Table 9 – Cost Allocation Matrix for Stormwater Program Option 3 and Option 4**

Cost Center	Type of cost		Cost Allocation		
	Direct Cost	Indirect Cost	Stormwater Quality (per EDU)	Stormwater Quantity (per EDU)	Account Based Charge (per Account)
Administration		✓	✓	✓	✓
Non-divisional	✓	✓	✓	✓	✓
Support Services		✓	✓	✓	✓
Planning/Development		✓	✓	✓	✓
Laboratory	✓		✓		
Ops Administration		✓	✓	✓	✓
Account Maint./Billing	✓				✓
Dispatch Services	✓		(See Note 1)	(See Note 1)	(See Note 1)
Pumps and Controls	✓			✓	
Environmental Services	✓		✓		
Cleaning	✓			✓	
TV Inspection	✓			✓	
Technical Services	✓			✓	
Stormwater Quality	✓		✓		
Stormwater Maintenance	✓			✓	
Street Sweeping	✓		(See Note 1)		(See Note 1)
Contingency		✓	✓	✓	✓
Allocated Overhead		✓	✓	✓	✓
Intra-City Services		✓	✓	✓	✓
Franchise Fees		✓	✓	✓	✓
Debt	✓		✓	✓	
Transfers (CIP)	✓		✓	✓	
Personal Services		✓	✓	✓	✓
Other Professional Services	✓		✓	✓	
Casualty insurance		✓	✓	✓	✓
Taxes		✓	✓	✓	✓
Bad debt write off	✓				✓
Transfers		✓	✓	✓	✓
Transfers (Operations)		✓	✓	✓	✓

Note (1): Dispatch Services, with a stormwater program component of approximately \$57,000, and Street Sweeping, which has an annual budget of approximately \$861,000 are direct charges that are allocated among Stormwater Quality (per EDU), Stormwater Quantity (per EDU), and Account Based Charge (per Account) under Option 3. They are both assigned as only “Account-based Charge (per Account)” under Option 4.

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Generally, as more program elements are removed from an EDU-only base charge and incorporated into a per-account charge, the greater the risk that the stormwater rate itself can be challenged as being inappropriately designed. Recognizing this risk, Option 3 has been crafted as the rate structure that incorporates a relatively low per-account charge, including cost centers for Account Maintenance/Billing and Bad Debt Write-off. Option 4 that follows has a higher per-account charge because it includes two additional program cost centers: Dispatch Services and Street Sweeping.

### Potential Impacts of Option 3

The calculations used to develop the stormwater rate structure for Option 3 are provided in Table 10. The overall results, estimated using generalized costs and account estimates, show that each of our approximately 41,500 stormwater ratepayers would be subject to a per-account base charge of approximately \$1.35 per month, which would reduce the remaining stormwater program costs to be allocated on an EDU-basis by approximately \$672,000 per year. This produces a revised EDU-based rate of approximately \$8.00/EDU per month. The resultant potential impacts illustrating the effects of Option 3 are illustrated in Table 11.

**Table 10 – Calculations for Option 3**

Annual Stormwater Program Cost .....	\$10,000,000
Total Number of Ratepayers .....	41,500
Per-account charge per month (for illustrative purposes only) .....	\$1.35
Per-account charge per year (for illustrative purposes only) .....	\$16.20

Annual Per-account Charge Offset to Stormwater Program:

$$41,500 \text{ Ratepayers} \times \$16.20/\text{Ratepayer} = \$672,300$$

Remaining Stormwater Program Costs:  $\$10,000,000 - \$672,300 = \$9,327,700$

Revised EDU-based Stormwater Rate:

$$\$9,327,700 \text{ remaining program cost} / 97,000 \text{ EDUs} = \$96.16/\text{EDU per year}$$

$$= \$8.01/\text{EDU per month}$$

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**Table 11 – Option 3 Potential Impacts to Sewer and Stormwater Ratepayers (monthly rate)**

Customer Type	Typical Current Wastewater + Stormwater Bill	Revised Bill: Current Wastewater + New Stormwater	Difference (\$)		Difference (%)	
Residential – Average	\$47.00	\$41.35	Decrease	\$5.65	Decrease	12%
Commercial – Small	\$209.00	\$250.150	Increase	\$41.15	Increase	20%
Commercial – Large	\$302.00	\$803.60	Increase	\$501.60	Increase	166%
Industrial – Large	\$61,000	\$58,195	Decrease	\$2,805	Decrease	4.6%

Note: The estimates presented in Table 11 are based on 3,000 ft<sup>2</sup> per EDU, a stormwater base charge of \$1.35 per month for each account, and a cost of \$8.00 per month for each EDU.

Overall, the potential impacts of Option 3 are that the residential sectors would see less of a decrease in their revised bill—lowered by roughly two percent—than would result in Option 1. The primary beneficiary of Option 3 in this sample set would be the large commercial sector of stormwater ratepayers. Although these ratepayers will still experience a significant increase in comparison to Option 1, the size of this increase is reduced from 179 percent to 166 percent as shown in Table 11. Again, these impacts are provided to illustrate overall potential impacts and trends on a selected set of sample ratepayers; they are not specific or limited to any specific ratepayer or ratepayer type.

### ***Option 4: EDU-based Stormwater Rate, Large Per-Account Base Charge***

Option 4 is developed in the same manner as Option 3, except that two additional cost centers are assigned as entirely per-account charges:

- Street Sweeping .....\$861,000 per year
- Dispatch Services.....\$57,000 per year

There is a strong basis for incorporating dispatch services and street sweeping into a per-account charge. Our dispatch services receive queries and calls for assistance that can be related to either, or both stormwater quality and stormwater quantity and which can result in actions that benefit multiple ratepayers. Street sweeping provides benefits for stormwater quality by removing pollutants before they are conveyed by stormwater runoff into our receiving water bodies. Street sweeping also benefits stormwater quantity by removing debris and floatable material that can compromise Salem’s drainage system and create localized flooding. Under our current operating schedule, the street sweeping services provided by the Stormwater Program is evenly divided between residential and non-residential streets.

By including dispatch services and street sweeping into the per-account base charge, the per-account rate increases from approximately \$1.35 per month (Option 3) to \$3.00 per month per account using estimated using generalized costs and account estimates. When this base charge is applied equally to all ratepayers, the remaining stormwater program cost to be allocated on an

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EDU-basis is lowered from approximately \$10M to \$8.5M per year. This produces a revised per-EDU rate of approximately \$7.30/EDU per month. The specific detailed calculations used to develop the stormwater rate structure for Option 4 is provided in Table 12.

<b>Table 12 – Calculations for Option 4</b>		
Annual Stormwater Program Cost .....	\$10,000,000	
Total Number of Ratepayers .....	41,500	
Per-account charge per month (for illustrative purposes only) .....	\$3.00	
Per-account charge per year (for illustrative purposes only) .....	\$36.00	
Annual Per-account Charge Offset to Stormwater Program:		
41,500 Ratepayers X \$36.00/Ratepayer =	\$1,494,000	
Remaining Stormwater Program Costs: \$10,000,000 - \$1,494,000 =		\$8,506,000
Revised EDU-based Stormwater Rate:		
\$8,506,000 remaining program cost/97,000 EDUs =	\$87.69/EDU per year	
	= \$7.31/EDU per month	

### **Advantages of Option 4**

The advantages of Option 4 are the same as Option 3, except that the commercial sector will be even more benefitted by the lower cost per EDU that under either Option 1 or Option 3. Commercial utility rates will still rise with the implementation of a stormwater rate, but this increase will be lower than would be seen under Option 1 or Option 3.

### **Disadvantages of Option 4**

As in Option 3, the two key disadvantages of Option 4 are: (1) the reduction in rates for residential and industrial sectors is less than in Option 1; and (2) the methodology itself is more complex than Option 1 or Option 2.

### **Potential Impacts of Option 4**

The resultant potential impacts illustrating the effects of Option 3 are summarized below in Table 13.

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**Table 13 – Option 4 Potential Impacts to Sewer and Stormwater Ratepayers (monthly rate)**

Customer Type	Typical Current Wastewater + Stormwater Bill	Revised Bill: Current Wastewater + New Stormwater	Difference (\$)	Difference (%)
Residential – Average	\$47.00	\$42.30	Decrease \$4.70	Decrease 10%
Commercial – Small	\$209.00	\$245.80	Increase \$36.80	Increase 18%
Commercial – Large	\$302.00	\$757.70	Increase \$455.70	Increase 151%
Industrial – Large	\$61,000	\$58,094	Decrease \$2,906	Decrease 4.8%

Note: The estimates presented in Table 13 are based on 3,000 ft<sup>2</sup> per EDU, a stormwater base charge of \$3.00 per month for each account, and a cost of \$7.30 per month for each EDU.

### ***Stormwater Rate Implementation Date and Phasing Alternatives***

Regardless of the choice of the stormwater rate structures described in Option 1 through Option 4, there are attendant decisions to be made regarding the date upon which the stormwater rate is first implemented and manner in which implementation of the stormwater rate is phased.

#### **Initial Implementation Date**

Based on a consideration of both calendar year and fiscal year planning issues, there are three potential dates on which to first implement the stormwater rate. Generally, owing to the expected increases and decreases in utility bills upon implementation of the stormwater rate, an earlier date is to the benefit of residential and the industrial ratepayers; a later date is most beneficial to commercial ratepayer. A later implementation date also delays decoupling Salem’s Stormwater Program funding from the wastewater rates.

January 1, 2011: The advantage of an initial implementation date of January 1, 2011, is that this initiates the decoupling of stormwater funding from the wastewater rate structure at the earliest possible timeframe. The nexus between stormwater rates and stormwater impacts of the ratepayers is established within a few months of anticipated Council action. The added advantage of implementing in January is that this coincides with the regularly scheduled rate changes for water and wastewater rates. The disadvantage of this earlier start date is that it reduces the time available for commercial ratepayers to prepare for potential budget impacts that will be caused by the significant increases in their utility bills. This earlier date also compresses the timeline for Public Works staff preparation, planning, and outreach efforts to be completed prior to implementation.

July 1, 2011: The advantage of a July 1, 2011, initial implementation date is that it provides an additional six months to commercial ratepayers to prepare for the potential budget impacts. It provides more time for Public Works staff to complete outreach efforts, respond to emerging issues, and more fully prepare for

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implementation. This also coincides with the start of the Public Works Department budget cycle. The principal disadvantage is that this implementation date is off-cycle from utility rate changes to water and wastewater rates that are implemented on January 1.

January 1, 2012: The advantage of an initial implementation date of January 1, 2012, is that this provides ample time to incorporate necessary budgetary preparation for those commercial ratepayers that will be most affected by the new rate, as well as additional time for preparations, notifications, and stakeholder engagement by Public Works staff. The January date also coincides with other utility rate changes. The primary disadvantage is that this date would represent a delay in implementation of nearly two years from the date the Water/Wastewater Task Force (W/WWTF) first approved moving forward with a stormwater utility. Another distinct disadvantage of a 2012 start date is that by the time the stormwater rate is implemented, the budget for the Stormwater Program will have grown from the current 2009/2010 fiscal year values owing to inflationary considerations and additional regulatory requirements, which will result in higher stormwater rates than presented in this report.

### Phasing Period

Among the options to consider when establishing the new stormwater rate is whether to implement it immediately or to phase implementation over a period of time. Under any of the stormwater rate-setting scenarios described in Option 1 through Option 4, commercial stormwater ratepayers with large amounts of impervious surface area will see significant increases in their utility bills, while it is expected that residential and the industrial ratepayer will see a decrease.

The primary advantage of phasing in the stormwater rate over time is that this better enables those ratepayers most adversely impacted by the new stormwater rate to make the adjustments to budgets and associated business practices to better accommodate the increased utility bills. Incorporating some manner of phasing would also be an affirmation of feedback received from commercial interests during the first eight months of public outreach regarding this proposal. There is also a precedent for a phasing approach to utility services that dates from the period during the early-2000s when Public Works conducted a detailed Cost of Service Analyses (COSA) for water and wastewater. The results of these two COSAs required significant adjustments to customer water and wastewater rates, which were accomplished over a period of five years, beginning in 2001. The disadvantage of phasing a rate increase over time is that doing so is more complicated to administer from a billing and customer service perspective. Additionally, changes that the various ratepayer types will see during the phasing-in period may be difficult to understand, particularly when these changes occur in conjunction with other independent rate setting adjustments for water and wastewater.

Among the primary advantages of a complete, one-time implementation of the stormwater rate is that rate reductions anticipated for residential and the industrial ratepayers will be immediately realized. Additionally, full implementation of a stormwater rate immediately establishes the desired nexus between the stormwater impacts of a property to the rates paid

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by the property owner. Among the many phasing options available from which to choose, three are put forward below:

No Phasing: Under this option, the full set of rate changes for all ratepayers would occur on the date selected for implementation.

Short-term Phasing: A short-term phasing-in period would be one that is completed within two to three years.

Long-term Phasing: A long-term phasing-in period would be one that is completed after more than three years have elapsed since initial implementation.

Under either short-term or long-term phasing, the means for accomplishing the phasing would be to continue funding a portion of the Stormwater Program through wastewater rates during the phase-in period. The complete decoupling of stormwater from wastewater would occur at the completion of the phasing period, after which wastewater rates would only fund wastewater services and the stormwater rates would fully fund stormwater services. Table 14 illustrates how phasing would be accomplished if the stormwater rate is initially implemented on January 1, 2011, and phased in with four incremental rate adjustments during a three-year period, with final implementation of the stormwater rate completed January 1, 2014. Table 15 shows how phasing would be accomplished if the stormwater rate is initially implemented on January 1, 2012, and phased in with three incremental rate adjustments over a two-year period, with final implementation of the stormwater rate completed January 1, 2014. Table 16 illustrates an 18-month phasing option, with an initial implementation date of July 1, 2011, the first rate adjustment occurring six months later on January 1, 2012, and the final adjustment on January 1, 2013.

**Table 14 – Illustration of Phasing Stormwater Rate over Four Rate Cycles**

Beginning Date	Funding for Stormwater Program	
	Stormwater Rate	Wastewater Rate
January 1, 2011 *	25%	75%
January 1, 2012	50%	50%
January 1, 2013	75%	25%
January 1, 2014	100%	0%

\* Initial implementation date is January 1, 2011.

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**Table 15 – Illustration 1 of Phasing Stormwater Rate over Three Rate Cycles**

Beginning Date	Funding for Stormwater Program	
	Stormwater Rate	Wastewater Rate
January 1, 2011	0%	100%
January 1, 2012*	33%	67%
January 1, 2013	67%	33%
January 1, 2014	100%	0%

\* Initial implementation date is January 1, 2012.

**Table 16 – Illustration 2 of Phasing Stormwater Rate over Three Rate Cycles**

Beginning Date	Funding for Stormwater Program	
	Stormwater Rate	Wastewater Rate
January 1, 2011	0%	100%
July 1, 2011*	33%	67%
January 1, 2012	67%	33%
January 1, 2013	100%	0%

\* Initial implementation date is July 1, 2011.

### Phasing Schedule

Regardless of the initial implementation date chosen, if a phasing option is selected, a related decision is to select the date at which subsequent stormwater rate adjustments would be made. For this, there are two options:

January 1: Adjusting stormwater rates on the first of January would coincide with periodic rate adjustments for water and wastewater.

July 1: If the stormwater rate is implemented on July 1, 2011, then adjusting stormwater rates on the first day of July in subsequent years would coincide with a 12-month period from initial implementation, but be out of synch with rate adjustments for water and wastewater.

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### ***Summary of Options for Establishing a Stormwater Rate***

Four options have been presented for structuring a stormwater rate. These options are summarized in Table 17, which lists key features, advantages, and disadvantages. Table 17 also illustrates the potential impacts of each option on the four general types of customers. Among the various combinations available regarding initial implementation dates and phasing options, seven are presented in Table 18. This table shows how each option would implement the stormwater rate and the relationship between the implementation schedule and the scheduled rate adjustments for Salem's water and wastewater rates. Option A1 fully implements the stormwater rate beginning January 1, 2011. Option A2 initially implements the stormwater rate in January 2011, and then phases the full rate over three additional rate cycles each successive January, as shown in Table 14 with the rate fully implemented with the final rate adjustment on January 1, 2014. Options B1, B2, and B3 initially implement the stormwater rate on July 1, 2011. Option B1 has no phasing and Option B2 phases the stormwater rate over three successive steps each July. Option B3 represents a hybrid implementation and phasing approach, involving an initial implementation date of July 1, 2011, with the next phasing step occurring on January 1, 2012, and the final rate adjustment occurring on January 1, 2013. This option is also shown in Table 16. Option C1 fully implements the stormwater rate beginning January 1, 2012. Option C2 reflects the phasing shown in Table 15, beginning with implementation on January 1, 2012, and containing two additional phasing steps each January, with complete implementation with the third rate change on January 1, 2014.



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**Table 17 – Matrix of Rate-setting Options for Stormwater Rate**

Name	Option 1 EDU-only Based Rate	Option 2 EDU-based with Residential Surcharge	Option 3 EDU-based with Small Per-account Charge	Option 4 EDU-based with Large Per-account Charge
Key features	All impervious surface areas are converted to EDU and the total stormwater program budget is allocated equally across all EDUs.	A fixed “residential surcharge” is established for single-family residential (SFR) properties. The remaining stormwater program budget is then allocated across all EDUs.	A small, fixed “per-account” charge is determined using the cost sectors of: account maintenance/billing and bad debt write-off. The remaining stormwater program budget is then allocated across all EDUs.	A larger, fixed “per-account” charge is determined as in Option 3 but that includes also street sweeping and dispatch services. The remaining stormwater program budget is then allocated across all EDUs.
Advantages	<ul style="list-style-type: none"> <li>• Simple and easy to understand</li> <li>• Reflects generally accepted practices nationwide for establishing stormwater rate</li> <li>• Retains nexus between stormwater impacts and stormwater rates</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces impacts of new rate on commercial sector</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces impacts of new rate on commercial sector</li> <li>• Retains nexus between stormwater impacts and stormwater rates</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces impacts of new rate on commercial sector</li> <li>• Retains nexus between stormwater impacts and stormwater rates</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>• Most significant adverse impact to commercial sector</li> </ul>	<ul style="list-style-type: none"> <li>• No nexus between stormwater impacts and SFR surcharge</li> <li>• Setting residential surcharge is a subjective exercise</li> </ul>	<ul style="list-style-type: none"> <li>• More complex rate-setting process</li> <li>• There is not a standardized methodology for establishing a per-account charge.</li> </ul>	<ul style="list-style-type: none"> <li>• More complex rate-setting process</li> <li>• There is not a standardized methodology for establishing a per-account charge.</li> </ul>
Cost per EDU used to estimate potential impacts (per month)	\$8.60 per EDU	\$5.70 per EDU	\$8.00 per EDU	\$7.00 per EDU
Estimated additional charge for estimating impacts (per month)	N/A	\$8.00 per SFR property	\$1.35 per account	\$3.70 per account
Illustrative Impacts (Current WW + SW bill per month)	Overall change in monthly WW + SW bill per month	Overall change in monthly WW + SW bill per month	Overall change in monthly WW + SW bill per month	Overall change in monthly WW + SW bill per month
Residential – Average (\$47.00)	Decrease ..... \$6.40 (14%)	Decrease ..... \$1.30 (3%)	Decrease ..... \$5.65 (12%)	Decrease ..... \$4.70 (10%)
Commercial – Small (\$209.00)	Increase ..... \$44.70 (21%)	Increase ..... \$20.54 (10%)	Increase ..... \$41.15 (20%)	Increase ..... \$36.80 (18%)
Commercial – Large (\$302.00)	Increase ..... \$539.30 (179%)	Increase ..... \$346.30 (115%)	Increase ..... \$501.60 (166%)	Increase ..... \$455.70 (151%)
Industrial – Large (\$61,000)	Decrease ..... \$3,853 (4.5%)	Decrease ..... \$3,887 (5.1%)	Decrease ..... \$3,860 (4.6%)	Decrease ..... \$2,906 (4.8%)

Note: WW = Wastewater, SW = Stormwater

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**Table 18 – Phasing Options for Implementing Stormwater Rate**

	2011		2012		2013		2014	
	January	July	January	July	January	July	January	July
Option A1 January 2011 Implementation No Phasing	W + WW Rate Adjustment		W + WW Rate Adjustment		W + WW + SW Rate Adjustment		W + WW + SW Rate Adjustment	
	<b>Stormwater Rate Implemented</b>							
Option A2 January 2011 Implementation With Phasing in January	W + WW Rate Adjustment		W + WW Rate Adjustment		W + WW + SW Rate Adjustment		W + WW + SW Rate Adjustment	
	<b>Stormwater Rate Implemented</b>		Stormwater Phase #1		Stormwater Phase #2		Stormwater Phase #3	
Option B1 July 2011 Implementation No Phasing	W + WW Rate Adjustment		W + WW Rate Adjustment		W + WW + SW Rate Adjustment		W + WW + SW Rate Adjustment	
		<b>Stormwater Rate Implemented</b>						
Option B2 July 2011 Implementation With Phasing in July	W + WW Rate Adjustment		W + WW Rate Adjustment		W + WW Rate Adjustment		W + WW Rate Adjustment	
		<b>Stormwater Rate Implemented</b>		Stormwater Phase #1		Stormwater Phase #2		Stormwater Phase #3
Option B3 July 2011 Implementation With Phasing in July/January	W + WW Rate Adjustment		W + WW Rate Adjustment		W + WW Rate Adjustment		W + WW + SW Rate Adjustment	
		<b>Stormwater Rate Implemented</b>	Stormwater Phase #1		Stormwater Phase #2			
Option C1 January 2012 Implementation No Phasing	W + WW Rate Adjustment		W + WW Rate Adjustment		W + WW + SW Rate Adjustment		W + WW + SW Rate Adjustment	
			<b>Stormwater Rate Implemented</b>					
Option C2 January 2012 Implementation With Phasing in January	W + WW Rate Adjustment		W + WW Rate Adjustment		W + WW Rate Adjustment		W + WW Rate Adjustment	
			<b>Stormwater Rate Implemented</b>		Stormwater Phase #1		Stormwater Phase #2	

Note: For Rate Adjustments, W = Water, WW = Wastewater, SW = Stormwater

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### CHAPTER 5. STORMWATER RATE REDUCTION CREDITS

As described in this report, stormwater rates in Salem will be a function of the amount of impervious surface of a property and the rate per equivalent dwelling unit (EDU). Impervious surfaces prevent stormwater from being absorbed into the ground and include rooftops, driveways, unpaved surfaces that are subject to vehicular traffic, roadways, and parking lots. The intent is to establish a stormwater rate that is related to impacts of ratepayers, and impervious surface has been determined to be a reasonable measure of the influences a property has on stormwater runoff quality and quantity.

A property's impacts on stormwater quality and quantity can be lowered by reducing the amount of impervious surface. This can be accomplished, for example, by replacing an asphalt parking area with specially designed pavers that allow stormwater to infiltrate into the ground or by removing the paved surface entirely and replacing it with vegetation planted in amended soils. Single-family residential (SFR) ratepayers who reduce the total impervious surface area on their property may be eligible for a rate adjustment if their revised impervious surface area places the property into a lower SFR rate tier (see page 18). Non-SFR ratepayers who reduce the amount of impervious surface on their property will be able to request an adjustment to their stormwater rate that will be calculated based on the revised number of EDUs on the property.

Stormwater impacts can also be reduced by installing one or more stormwater facilities on the property. Stormwater flow control facilities are designed to reduce the volume and/or the rate of runoff leaving a property. Stormwater treatment facilities remove pollutants from stormwater through mechanical, biological, or other means. Some facilities mitigate both stormwater quantity and stormwater quality impacts. Non-SFR ratepayers who can document that there is a stormwater flow control or stormwater treatment facility on the property may be eligible for a stormwater rate *credit* (in contrast to an EDU-based rate *reduction*), as described below.

#### ***Stormwater Rate Credit Policies***

Salem's stormwater rate credit program will be established based on the following policies:

1. Rate credits will be available for non-SFR properties that have installed approved stormwater flow control and/or treatment facilities that meet or exceed existing City development requirements at the time of application.
2. The candidate stormwater facilities must have been designed, constructed, and maintained in accordance with City-approved regulations, standards, and requirements.
3. Rate credits will not be available for single-family residential properties.
4. The maximum allowable credit amount will be based on:
  - The type and size of the stormwater facility;
  - The amount of the property's impervious surface area that is routed to the facility; and
  - A portion of the ratepayer's EDU-based stormwater rate that supports the stormwater quantity-related programs, stormwater quality-related programs, or both, depending on the facility.

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5. A uniform rate credit factor will be assigned for each type of approved stormwater facility based on an assessment of the stormwater performance of the facility.
6. Properties determined to be eligible for a stormwater credit by November 1 of each year will have their rate adjusted beginning January 1 of the next year.
7. Stormwater rate credits will remain on the account for as long as the drainage characteristics of the property remain unchanged and as long as the stormwater facility is properly operated and maintained.
8. Salem Public Work staff may inspect the stormwater facility at any time to confirm application information and continued eligibility for the credit. Inspections may include confirmation of the property's drainage characteristics and determination that the facility meets the technical design requirements, is properly maintained, and is performing as designed.
9. Reducing impervious surface of a property does not qualify for a stormwater rate *credit*, but will result in a stormwater rate *adjustment* using the full EDU-based stormwater rate calculation.
10. A maximum stormwater rate credit will be established to ensure that the stormwater bill of non-SFR ratepayers will not fall below the average stormwater rate for SFR ratepayers.
11. The Public Works Director may require an engineering report, hydrologic analysis, or stormwater quality monitoring data be provided to confirm the reported performance of a stormwater facility.
12. At the discretion of the Public Works Director, the rate credit may be terminated if the ratepayer fails to maintain the facility in proper working order, the property changes ownership, the drainage characteristics of the property changes, the property is redeveloped, or the property boundaries change.

These policies have been established to ensure there is equity and fairness among ratepayers while, at the same time, balancing administrative costs with ratepayer benefits. Additional information and details regarding stormwater rate credits are provided in Appendix B.

### ***Stormwater Facility Rate Credits***

At the time of this report, analysis is underway to determine the rate reduction credit for different stormwater flow control and treatment facilities. The types of facilities under consideration currently include, but are not limited to the following:

Bioswale	Vegetated Filter Strip	Detention Vault/Pipe
Bioretention/Rain Garden	Stormwater Wetland	Sand Filter
Infiltration Trench	Wet Vault	Media Filter
Permeable Pavement	Wet Pond	Oil/Water Separator
Stormwater Planters	Detention Pond/Basin	

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A performance value will be assigned to each type of stormwater facility based on an assessment of the ability of the facility to remove pollutants and/or lower peak stormwater discharge rates. The actual effectiveness of a facility depends on many factors, including the targeted performance standards (e.g., desired discharge flow rate or effluent pollutant concentration), design and construction standards, status of ongoing maintenance, and the individual storm event and influent pollutant concentrations during the event. Owing to the inherent difficulty and uncertainty in determining the effectiveness of various stormwater facilities, the assigned performance values for each will be generally classified as complete (100%), high (75%), medium (50%), low (25%), or none (0%). The assessed classification will be based on best professional judgment using information drawn from published literature and stormwater rate reduction programs used by other jurisdictions. Table 19 shows currently assigned performance values.

**Table 19 – Assigned Performance Values for Stormwater Facilities**

Type of Facility	Assigned Performance Value	
	Stormwater Quantity	Stormwater Quality
Bioretention/Rain Garden with Liner	50%	75%
Bioretention/Rain Garden with Underdrain	50%	75%
Bioretention/Rain Garden without Underdrain	75%	75%
Bioswale - Basic	0%	75%
Bioswale - Continuous	0%	75%
Bioswale - Wet	0%	75%
Detention Vault/Pipe	25%	0%
Detention Pond/Basin	25%	0%
Infiltration Trench with Underdrain	25%	25%
Infiltration Trench without Underdrain	50%	25%
Media Filter	0%	75%
Oil/Water Separator	0%	75%
Porous/Permeable Pavement with Underdrain	50%	75%
Porous/Permeable Pavement without Underdrain	75%	75%
Sand Filter	0%	75%
Stormwater Planters	25%	50%
Vegetated Filter Strip	0%	75%
Wet Pond	25%	75%
Wet Vault	25%	75%
Wetland, Constructed Stormwater Treatment	25%	75%
Willamette River discharge point via a private stormwater conveyance system	100%	0%

## Establishing a Stormwater Utility

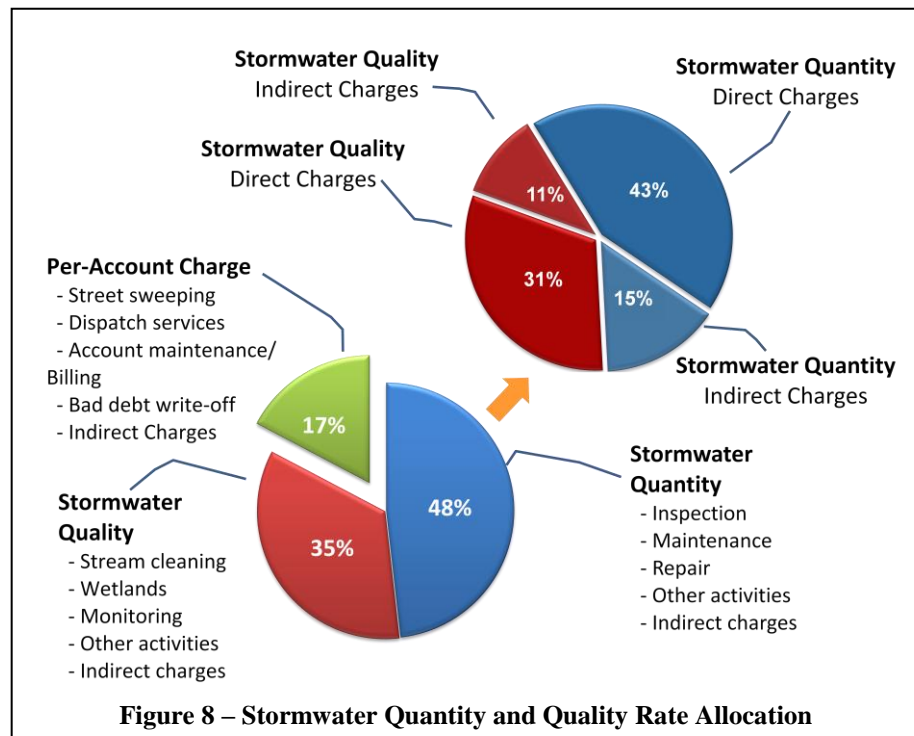
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### ***Direct Stormwater Discharge to the Willamette River***

If a property discharged directly into the Willamette River through a private stormwater system, that property will be eligible to receive a reduction in that portion of its stormwater rate allocated to the stormwater quantity.

### ***Stormwater Quantity and Stormwater Quality Stormwater Rate Allocation***

A ratepayer’s eligibility for a stormwater rate credit will be based on the portion of the ratepayer’s EDU-based stormwater rate that directly supports the City’s stormwater quantity-related or stormwater quality-related programs. Estimates of the portions of each is illustrated in Figure 8, which shows that the total stormwater program budget can be divided into three component parts, as proposed under Option 4 (see Chapter 4 and beginning on page 28). As shown in the lower left-hand chart of Figure 8, “Stormwater Quantity” includes programmatic activities such as drainage system inspection, maintenance, and repair. After indirect costs are included, Stormwater Quantity represents 48 percent of the entire stormwater program budget. “Stormwater Quality” includes stream cleaning, wetlands management, and monitoring, and (with indirect costs) represents 35 percent of the total budget. Costs under “Per-Account Charge” make up the remaining 17 percent and include street sweeping, dispatch services, account maintenance/billing, bad debt write-off, and indirect costs.



maintenance/billing, bad debt write-off, and indirect costs. The indirect costs in all three rate categories include their apportioned share of such support services as planning and development, contingency, administration, and others (see Table 9 on page 26 for a list of direct and indirect costs). The upper right-hand chart in Figure 8 shows the relative portion of stormwater quantity and stormwater quality after the per-account charges have been removed. This figure also shows the relationship between direct and indirect costs. Approximately 58 percent of the EDU-based stormwater rate supports the City’s stormwater quantity-related programs. Of this value, 43 percent are direct and 15 percent are indirect costs. Similarly, 42 percent of the EDU-based rate supports stormwater quality aspects of the Stormwater Program, of which 31 percent are direct and 11 percent are indirect costs.

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### ***Illustrative Example for Stormwater Rate Credits***

The stormwater rate credit will be based on the amount of impervious surface routed to the stormwater treatment and/or flow control facility and the type of facility. As described above, stormwater rate credits will be applied to that portion of the ratepayer’s EDU-based stormwater rate that directly supports either or both stormwater quality and stormwater quantity aspects of Salem’s Stormwater Program. To illustrate this, consider the following example, which uses a stormwater rate construct as described in Option 4 in the previous chapter and contains a fixed stormwater base charge of \$4.00 per month and a monthly impervious surface-based rate of approximately \$7.00 per EDU.

A commercial ratepayer with 200,000 square feet of impervious surface pays a monthly stormwater rate of \$474, of which \$4.00 is the per-account base charge and the remaining EDU-based rate of \$470 is calculated using 3,000 square feet per EDU and approximately \$7.00/EDU. Of this EDU-based rate, analysis of Salem’s Stormwater Program budget and the supporting rate structure shows that 58 percent of this EDU-based rate supports the stormwater quantity functions of the Stormwater Program, of which 43 percent is related to direct costs and 15 percent to indirect costs. The remaining 42 percent supports the stormwater quality functions, of which 31 percent is related to direct costs and 11 percent to indirect costs. The allocation of the total stormwater rate assigned to this property is shown in Table 20.

<b>Table 20 – Calculations for Stormwater Rate Components</b>	
Per-account Charge .....	\$4.00
EDU-based for Stormwater Quantity-Direct Costs = \$470 X 43% .....	\$202.10
EDU-based for Stormwater Quantity-Indirect Costs = \$470 X 15% .....	\$70.50
EDU-based for Stormwater Quality-Direct Costs= \$470 X 31% .....	\$145.70
EDU-based for Stormwater Quality-Indirect Costs = \$470 X 11% .....	\$51.70
<b>Total Stormwater Rate .....</b>	<b>\$474.00</b>

On this commercial property is a stormwater media filtration system designed to receive flows from the 50 percent of the impervious surface. There is also a detention facility that receives flow from the rooftop, which makes up 40 percent of the remaining impervious surface. Ten percent of the impervious surface is discharged directly into the public municipal storm system without treatment or flow control. The following performance values have been assigned (see Table 19):

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Stormwater Detention Facility .....	25 percent
Stormwater media filtration .....	75 percent

Upon successful application and approval for a stormwater credit, the commercial ratepayer would be eligible to receive a reduction in the stormwater rate as shown in Table 21 below:

<b>Table 21 – Calculations for Stormwater Rate Credit</b>	
<u>Stormwater Quantity</u>	
Percent surface X Performance value X EDU-based rate for stormwater quantity	
40% X 25% X \$202.10 .....	\$20.20 per month
<u>Stormwater Quality</u>	
Percent surface X Performance value X EDU-based rate for stormwater quality	
50% X 75% X \$145.70 .....	\$56.75 per month
<u>Total Stormwater Rate Reduction</u>	
\$20.20 + \$56.72.....	\$74.85 per month
<u>Percent Total Stormwater Rate Reduction</u>	
\$74.85/\$474.00.....	16%

***Opportunity for Review of Stormwater Rates***

Stormwater ratepayers will be able to request a review of their rate to determine whether an adjustment is necessary owing to a revised amount of impervious surface or a credit is due as a result of one or more stormwater facilities being onsite. Appendix B provides a summary listing of the type of information that would be needed to be provided by a ratepayer requesting a review of the property’s stormwater rate.

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### **CHAPTER 6. RECOMMENDATIONS FOR STORMWATER RATE**

After thoroughly considering the options and weighing the pros and cons, the staff recommends establishing a stormwater rate for the City of Salem with the following structure.

#### ***Stormwater Rate Structure – Option 4***

The staff recommends rate setting structure is Option 4 as described in Chapter 4, which incorporates into a per-account base charge the cost centers of Account Maintenance/Billing and Bad Debt Write-off of Option 3 and adds Street Sweeping and Dispatch Services. We believe these four services are shared in common by all stormwater ratepayers and are, therefore, appropriate for inclusion as a base charge. After the base charge is applied to all stormwater accounts, the remaining balance of the Stormwater Program budget is allocated on a per-EDU basis. Initial calculations indicate that this option will result in an overall reduction in the combined stormwater and wastewater rates for our residential customers and some of our industrial ratepayers. Combined wastewater plus stormwater rates are still expected to increase for commercial customers, but not as significantly as under the EDU-only rate setting structure described as Option 1. Unlike Option 2, which levies a flat fee on residential ratepayers, Option 4 retains the nexus between stormwater services and stormwater rates. Finally, Option 4 meets all four foundational principles in that it is fair, understandable, implementable, and sustainable.

In concert with Option 4, the staff recommends a three-tiered rate for single-family residential properties as described in Chapter 3 in which approximately 75 percent of all SFR ratepayers will pay the same average rate and those SFR ratepayers having impervious surface areas in the largest and smallest 12.5 percent will pay a rate that is 12.5 percent higher and lower than average, respectively. We believe 75 percent is a reasonable proportion of the residential ratepayers to be assessed an average rate.

#### ***Initial Implementation Date – July 1, 2011***

The recommended date to initially implement the stormwater rate is July 1, 2011. As described in Chapter 4, this represents a midpoint between an implementation date of January 1, 2011, which may be too soon for certain ratepayers, and January 1, 2012, which may be too long of a delay in implementation for other ratepayers. We acknowledge that this date delays our residential and the industrial ratepayers from realizing reductions in their revised combined wastewater plus stormwater rates at the earliest possible date and it postpones accomplishing our ultimate goal of decoupling stormwater rates from wastewater rates. However, implementing the new stormwater rate on July 1, 2011, provides additional time for Public Works to conduct thorough public outreach with ratepayers after the Council approval that is expected to occur in late 2011. Additionally, this date provides reasonable time for commercial ratepayers, some of whom will see significant increases in their revised rates, to make necessary adjustments in budgets and business practices.

#### ***Phasing – Three Rate Cycles over Two-year Period each January***

The recommended period to phase in the stormwater rate is through three rate adjustments that would occur over an 18-month year period as described in Chapter 4 as Option B3. The

## **Establishing a Stormwater Utility**

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stormwater rate would be initially implemented on July 1, 2011, with the stormwater rate initially supporting approximately one-third of the Stormwater Program and wastewater rates the remaining two-thirds. On January 1, 2012, six months after the initial stormwater rate has been implemented, a second rate adjustment would be made. This rate adjustment would shift another one-third of the stormwater program funding from the wastewater fund so that stormwater rates support two-thirds and wastewater rates support one-third of the total Stormwater Program budget. On January 1, 2013, decoupling between stormwater and wastewater rates would be completed with a final rate adjustment. The primary advantage of recommending the January 1 dates for phasing is that this places the stormwater rate adjustments on-cycle with the existing rate adjustment schedule for water and wastewater at the earliest possible date following the July 1 initial implementation date.

### ***Stormwater Rate Reductions***

It is recommended that eligible non-SFR ratepayers received a reduction in their stormwater rate based on the policies as described in Chapter 5. Of particular note in the twelve policies listed in this chapter is the recommendation that credits be afforded to ratepayers that have installed on-site stormwater facilities that meet or exceed City development requirements at the time of application. This policy is primarily based on the premise that a qualifying facility reduces the stormwater impacts of a ratepayer's property, regardless of whether the facility meets or exceeds existing development requirements. We believe this difference should be reflected in a ratepayer's bill in comparison to the rate assigned to a property with the same amount of impervious surface but without such a facility.

**APPENDIX A: RECORD OF PUBLIC OUTREACH**

September 17, 2009 .....	Water/Wastewater Task Force
October 15, 2009.....	Water/Wastewater Task Force
November 19, 2009.....	Water/Wastewater Task Force
November 20, 2009.....	Marion County Public Works Staff
December 17, 2009 .....	Water/Wastewater Task Force
January 11, 2010 .....	City Council Work Session
January 26, 2010 .....	Lansing Neighborhood Association
January 26, 2010 .....	Shade Tree Advisory Committee
February 1, 2010 .....	West Salem Neighborhood Association
February 2, 2010 .....	Strategic Economic Development Corporation
February 3, 2010 .....	Faye Wright Neighborhood Association
February 3, 2010 .....	South Salem Lions Club
February 3, 2010 .....	West Salem Redevelopment Advisory Board
February 4, 2010 .....	East Lancaster Neighborhood Association
February 4, 2010 .....	Grant Neighborhood Association
February 4, 2010 .....	North Gateway Urban Renewal Advisory Board
February 9, 2010 .....	Southeast Mill Creek Neighborhood Association
February 10, 2010 .....	Morningside Neighborhood Association
February 10, 2010 .....	Capital Kiwanis Club
February 11, 2010 .....	South East Salem Neighborhood Association
February 11, 2010 .....	South Gateway Neighborhood Association
February 16, 2010 .....	Central Area Neighborhood Association
February 16, 2010 .....	Northeast Neighbors Neighborhood Association
February 16, 2010 .....	Northeast Salem Neighborhood Association
February 17, 2010 .....	Home Builders Association of Marion & Polk Counties
February 18, 2010 .....	Sunnyslope Neighborhood Association
February 24, 2010 .....	Oregon Department of Corrections
February 24, 2010 .....	Housing & Urban Development Advisory Committee
February 25, 2010 .....	Downtown Lions Club



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## **APPENDIX A: RECORD OF PUBLIC OUTREACH (continued)**

March 3, 2010 .....	West Salem Lions Club
March 3, 2010 .....	Withnell Dodge
March 4, 2010 .....	South Salem Neighborhood Association
March 4, 2010 .....	Salem Chamber of Commerce
March 8, 2010 .....	Oregon Department of Administrative Services
March 9, 2010 .....	Northgate Neighborhood Association
March 9, 2010 .....	Salem Kiwanis Club
March 9, 2010 .....	Skyline Ford
March 10, 2010 .....	South Center Area Neighborhood Association
March 15, 2010 .....	North Lancaster Neighborhood Association
March 15, 2010 .....	Roth's Food Center
March 16, 2010 .....	Croisan-Illahe Neighborhood Association
March 18, 2010 .....	Glenn-Gibson Watershed Council
March 18, 2010 .....	Willamette Valley Commercial Realtors
March 30, 2010 .....	South Salem Rotary
April 1, 2010 .....	Oregon Cherry Growers
May 3, 2010 .....	Salem Association of Realtors
May 12, 2010 .....	Marion County Public Works Staff
May 13, 2010 .....	Salem Hospital
May 18, 2010 .....	Morningstar Community Church
May 25, 2010 .....	Salem Area Auto Dealers Assn
May 27, 2010 .....	Downtown Advisory Board
June 1, 2010 .....	Marion County Board of Commissioners Work Session
June 2, 2010 .....	Willamette University
July 6, 2010 .....	Salem-Keizer Transit Board
July 6, 2010 .....	Salem-Keizer Transit Board
July 15, 2010 .....	Water/Wastewater Task Force
August 19, 2010 .....	Water/Wastewater Task Force
September 16, 2010 .....	Water/Wastewater Task Force

**APPENDIX B: REQUEST FOR STORMWATER RATE REVIEW**

The proposed stormwater rate will provide an opportunity for ratepayers to request a review to determine if a rate adjustment or rate credit may be warranted. A stormwater rate adjustment may be granted if:

- (1) The actual impervious surface is greater or less than the impervious surface on record;
- (2) The classification of the property (e.g., SFR, commercial, open/undeveloped) is different from the classification on record;
- (3) A portion of the stormwater running off the property is directly discharged to the Willamette River via a private drainage system; or
- (4) A portion of the stormwater runoff on the property is routed to the public sanitary sewer system.

A stormwater credit may be granted if the ratepayer has a stormwater treatment or stormwater flow control facility located on the property that receives runoff from all or a portion of the impervious surface. The amount of credit that will be applied depends on the type of facility and the amount of impervious surface routed to the facility.

This appendix provides a summary listing of the type of information to be submitted as part of a request for a stormwater rate review.

# Establishing a Stormwater Rate

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## REQUEST FOR STORMWATER RATE REVIEW

### I. Ratepayer/Property Identification

*Applicant Name*

*Owner Information*

*Property identification*

*Contact Information*

### II. Request for Rate Adjustment

#### **A. SFR Rate Tier Adjustment**

**[SFR = Single-Family Residential]**

*Actual measured impervious surface area*

*Include: house footprint (including attached garage), outbuildings (detached garage, sheds, etc), driveway, walkway, paved patio or solid surface decking, other impervious surface areas.*

*Exclude: public sidewalks, grass and vegetated areas*

#### **B. Rate Classification Adjustment**

*SFR to Non-SFR*

*Non-SFR to SFR*

*Non-SFR to Open/Undeveloped*

#### **C. Total Impervious Surface Adjustment**

*Actual measured impervious surface area*

*Include: building roof areas, parking areas, driveways, private roadways, all unpaved surfaces subject to vehicular traffic, privately maintained sidewalks and walkways, other impervious surface areas.*

*Exclude: public sidewalks, grass and vegetated areas*

#### **D. Alternative Discharge Adjustment**

*Total impervious surface area discharging to public sewer system and portion of the year in which this discharge occurs.*

#### **E. Other**

*Describe*

# Establishing a Stormwater Rate

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## REQUEST FOR STORMWATER RATE REVIEW

(continued)

### **III. Request for Stormwater Rate Credit**

#### **A. Type of Facility:**

1. *Bioretention/Rain Garden with Liner*
2. *Bioretention/Rain Garden with Underdrain*
3. *Bioretention/Rain Garden without Underdrain*
4. *Bioswale - Basic*
5. *Bioswale - Continuous*
6. *Bioswale - Wet*
7. *Detention Vault/Pipe*
8. *Detention Pond/Basin*
9. *Infiltration Trench with Underdrain*
10. *Infiltration Trench without Underdrain*
11. *Media Filter*
12. *Oil/Water Separator*
13. *Porous/Permeable Pavement with Underdrain*
14. *Porous/Permeable Pavement without Underdrain*
15. *Sand Filter*
16. *Stormwater Planters*
17. *Vegetated Filter Strip*
18. *Wet Pond*
19. *Wet Vault*
20. *Wetland, Constructed Stormwater Treatment*
21. *Other (describe)*

#### **B. Facility Details:**

1. *Date facility constructed*
2. *Design criteria used for facility (e.g., post-development flow rate, design storm size for treatment, etc.)*
3. *Design standards used for facility (e.g., City of Salem design standards, City of Portland design standards, other)*
4. *Total impervious surface area routed to facility*
5. *Date facility was last maintained*
6. *Date facility was last inspected*

# Establishing a Stormwater Rate

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## REQUEST FOR STORMWATER RATE REVIEW

(continued)

### C. Willamette River Discharge Credit

*Total impervious surface area discharging to Willamette River via private storm drain system*

### D. Additional Information:

*Map(s) showing property, facility location, flow routing*

*Additional documentation as required (engineer plans, approvals, photographs, etc.)*

## IV. Applicant Certification

*Authority to submit Request for Stormwater Rate Review*

*Accuracy of information provided*

*Signature*

*Date*

## **APPENDIX C: OTHER RATE STRUCTURE CONSIDERATIONS**

In the body of this report, four options for structuring a proposed stormwater rate are presented and one of the four is recommended. During the course of policy development and public involvement, other recommendations have been received and considered regarding possible rate structures. This appendix briefly discusses six of these alternative approaches. These approaches are not currently recommended for implementation.

### **Enhanced Impervious/Non-impervious Surface Delineation**

In the current proposal, impervious surfaces are defined as paved areas, rooftops, and unpaved surfaces subject to vehicular traffic. These surfaces are all considered to have the same stormwater runoff characteristics. Accordingly, all impervious surfaces are assessed the same, EDU-based stormwater rate. All other surfaces are classified as non-impervious and are considered to have no impacts on stormwater quality or stormwater quantity; non-impervious surfaces pay no EDU-based stormwater rate. Among the future potential rate structure enhancements would be to develop methods to account for the variability of impacts that both impervious and non-impervious surfaces can have on stormwater quality and quantity. For example, rooftops and parking surfaces are likely to have different pollutant constituents because the source of pollutants on rooftops is primarily atmospheric deposition and the source of pollutants on a parking lot is from vehicles. As an example how stormwater quantity impacts can vary between non-impervious surfaces, it can be demonstrated that thickly vegetated landscaping placed over deeply amended soils will have a significantly lower volume of stormwater runoff a thin layer of sod that has been rolled in place over compacted South Salem clay.

A future option to enhance Salem's stormwater rate structure would be to establish a range of EDU-based stormwater rates for different types of impervious *and* non-impervious surfaces.

### **Enhanced Runoff Consideration**

In the current proposal, runoff from all impervious surfaces is considered to have the same impacts on the receiving public drainage system regardless of flow characteristics or travel distances to a stormwater system or receiving water. In practice, however, the impacts an impervious surface may have on downstream drainage systems and to receiving waters will vary with both geography and topography. Runoff from properties discharged directly into a public storm drainage system will have a more direct and immediate impact than a property that is able to route flows into adjacent open areas from which a reduced volume of runoff will eventually enter the public system.

A future option to enhance Salem's stormwater rate structure would be to establish submittal requirements for an engineering report indentifying site-specific flow rates/volumes and certifying stormwater runoff flow patterns for the purposes of providing a stormwater rate credit or adjustment.

**Rate Factor for Parking in Excess of Mandated Minimum**

One of the earliest recommendations received during public outreach was to consider charging a lower, EDU-based stormwater rate for parking spaces if the ratepayer has spaces had been installed simply to meet minimum parking requirements as contained in the Salem Revised Code. The basis for this proposal is that it is unreasonable to charge a ratepayer a full stormwater rate if the impervious surface on the property was installed because of a City requirement. To evaluate this consideration, an assessment was done on 21 businesses to determine if it is common practice to build up to, or to build in excess of, the minimum mandated parking. Table C-1 provides the results of this spot check of business building practices.

**TableC-1 – Code Required v. Existing Parking Spaces**

<b>Type of Business</b>	<b>Minimum Parking (Current Code)</b>	<b>Existing Parking</b>	<b>Factor Existing/Minimum</b>
Athletic Club	537	249	0.5
Grocery	175	125	0.7
Grocery	161	154	1.0
Large Retail Store	694	694	1.0
Large Retail Store	1023	1028	1.0
Commercial Office	104	110	1.1
Commercial Office	84	94	1.1
Grocery	332	470	1.4
Commercial Office	24	35	1.5
Commercial Office	12	21	1.8
Commercial Office	39	82	2.1
Restaurant	28	61	2.2
Commercial Office	5	12	2.4
Grocery	225	530	2.4
Commercial Office	15	40	2.7
Church	242	662	2.7
Commercial Office	11	32	2.9
Large Retail Store	125	367	2.9
Commercial Office	7	22	3.1
Large Retail Store	171	607	3.5
Theater	55	256	4.7

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Of the 21 businesses that were examined, two (an athletic club and a grocery store) were determined to have a number of parking spaces below the minimum required by the current code. Three others, one grocery store and two large retailers, had parking at the mandated rate. The remaining 16 of the 21 businesses examined had parking spaces that ranged from 10 percent above to 4.7 times in excess of the minimum. The conclusion reached from this limited investigation is that it is a general practice to install parking necessary to meet the business needs and this parking is typically in excess of the minimum required by the City's code. In conjunction with this study, it was further determined that there was no clear methodology for assessing different stormwater runoff impacts from parking spaces when the only differentiating factor was whether a space was installed to meet code. From a stormwater runoff and pollutant transport perspective, two adjacent parking spaces can generally be considered to have the same characteristics.

Additionally, if the City were to assign a reduced stormwater rate to a particular impervious surface because it was installed as a requirement of City Code, then it would also be necessary to reconsider the stormwater credit proposal, which provides a credit for an on-site stormwater facility even if that facility only meets the City's regulatory requirements. Of note is that some municipalities that provide credits for onsite stormwater facilities only do so for facilities that exceed mandated requirements.

### **Rate Credits for Single-Family Residential Ratepayers**

The proposed stormwater rate structure provides for stormwater rate credits to be granted only to non-single-family residential ratepayers who have onsite stormwater facilities that reduce the property's impacts on stormwater quantity or quality (see Chapter 5). A commonly heard comment during the public process was that single-family residential (SFR) ratepayers who implement measures to reduce the stormwater impacts of their property should also be eligible for a rate credit. While it is desirable that SFR ratepayers take steps to better manage stormwater on their property, providing a stormwater rate credit is not currently recommended for three reasons: (1) with over 31,000 SFR ratepayers, the number of requests for a stormwater credit may overwhelm the ability of the City to properly process them; (2) the potential cost savings for an SFR ratepayer is on the order of \$5 to \$15 per year, which does not necessarily warrant the ratepayer's time and effort necessary to prepare and submit a request for a rate credit; (3) the cost for the staff to manage the number of potential SFR rate credit applications is significantly higher than the overall potential benefits to all our stormwater ratepayers and is, therefore, not an efficient or appropriate use of limited ratepayer resources. Note, however, that an SFR ratepayer will be able to submit a request for an adjustment (i.e., move to a different tier of the SFR rate) if there is a change in the actual impervious surface area.

### **Delay Complete Recovery of Stormwater Cost**

One alternative to the recommended rate structure would be to delay the full transfer of the Stormwater Program costs to the stormwater rate until after a full Cost of Service Analysis (COSA) update has been conducted for all three utilities (water, wastewater, stormwater), which is scheduled for completion in 2013. Under this alternative, approximately 60 percent of the projected Stormwater Program costs would be initially borne by the stormwater ratepayers and the remaining costs would be supported by water and wastewater rates until the three COSA

## Establishing a Stormwater Rate

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updates have been completed. The rationale behind this option is that not all of the costs of the City’s Stormwater Program, most particularly the indirect costs, have been quantified to the degree of detail and certainty that is associated with a full COSA update. Table C-2 illustrates the rates changes for this alternative and compares the results to the rate structure recommended in this report (see Chapter 6).

**Table C-2–Alternative #1 Potential Impacts to Ratepayers (monthly rate)**

Customer Type	Typical Current Bill Wastewater + Stormwater	Typical Revised Bill: Wastewater + Stormwater	Alternative Rate Structure 60 Percent Cost Recovery		Recommended Rate Structure Option 4-EDU plus Per-Account	
			Difference (\$)	Difference (%)	Difference (\$)	Difference (%)
Residential - Average	\$47.00	\$46.90	Decrease \$0.10	Decrease 0.2%	Decrease \$4.70	Decrease 10%
Commercial - Small	\$209.00	\$232.00	Increase \$23.00	Increase 11%	Increase \$36.80	Increase 18%
Commercial - Large	\$302.00	\$585.80	Increase \$283.80	Increase 94%	Increase \$455.70	Increase 151%
Industrial - Large	\$61,000	\$60,927	Decrease \$73.00	Decrease 0.1%	Decrease \$2,906	Decrease 4.8%

Note: The estimates presented in Table C-2 for the Alternative Rate Structure are based on the stormwater rate supporting approximately 60 percent of the stormwater revenue requirements and the remaining 40 percent supported by wastewater and water rates. The estimates for the Recommended Rate Structure are taken from Table 13 in the report.

A comparison between the estimated changes in revised bills (stormwater plus wastewater) for the customer types illustrated in Table C-2 indicates that when only 60 percent of the Stormwater Program costs are supported by the stormwater rate, the increase is about one-third less than the increase of the recommended option for commercial ratepayers (see discussion of Option 4 in Chapter 4). For residential and industrial ratepayers, the decrease is much smaller for this alternative rate structure than these ratepayers would experience under the recommended option.

Delaying a complete transfer of stormwater programmatic costs to stormwater ratepayers until after completion of the COSAs has the advantage of ensuring that the allocations of costs among *all* utility ratepayers is the most accurate possible. It also has the added advantage of delaying the full impact of the new stormwater rate on our commercial ratepayers until a later time. The primary disadvantage of this alternative is that it prolongs the time period during which wastewater (and water) ratepayers are paying for Salem’s Stormwater Program. The 60 percent estimate is based on including direct costs and debt services with the stormwater budget, but with indirect costs and cash-funded capital projects removed. However, once all three COSAs have been completed, the rates will be recalculated and commercial ratepayers can expect to see a significant increase as the remaining costs are incorporated into the stormwater rate structure.

## Per-Account Charges to Include Public Roadways

The recommended rate structure includes a per-account base charge that funds Account Maintenance/Billing, Bad Debt Recovery, Street Sweeping, and Dispatch Services cost sectors of the City’s Stormwater Program. After the base charge is applied to all accounts, the remaining programmatic costs are allocated on a per-EDU basis. Under this option—and all options presented thus far in this report—public roadways, and private roads that serve the same functions as public roadways, will not be subject to the stormwater rate. There are two reasons for this. Firstly, these surfaces serve as part of the stormwater drainage system by collecting and routing stormwater runoff. Secondly, it has been a longstanding policy that Salem’s taxpayers and ratepayers will not be charged for the City’s utility services. For example, the City does not pay for the water provided by the City that is used to maintain our parks.

One alternative to the recommended rate structure would be to apply a stormwater rate to Salem’s roadways and incorporate this rate into the per-account base charge. The rationale behind this alternative is that all ratepayers benefit equally from these roadways and, therefore, should share equally in paying the stormwater rate assigned to these impervious surfaces. To evaluate the potential implications of this alternative, an additional 25 percent impervious surface area was added to the total number of EDUs citywide. This resulted in an estimated 130,000 total EDUs. Using the updated EDU count resulted in a revised per-account rate of \$8.40 and an impervious surface rate of \$5.90 per EDU. Table C-3 illustrates the rates impacts of this alternative and compares the results to the rate structure recommended in this report.

**Table C-3—Alternative #2 Potential Impacts to Ratepayers (monthly rate)**

Customer Type	Typical Current Bill Wastewater + Stormwater	Typical Revised Bill: Wastewater + Stormwater	Alternative Rate Structure Roadways as Per-Account Charge		Recommended Rate Structure Option 4-EDU plus Per-Account	
			Difference (\$)	Difference (%)	Difference (\$)	Difference (%)
Residential - Average	\$47.00	\$44.25	Decrease \$2.75	Decrease 5.8%	Decrease \$4.70	Decrease 10%
Commercial - Small	\$209.00	\$238.25	Increase \$29.25	Increase 14%	Increase \$36.80	Increase 18%
Commercial - Large	\$302.00	\$670.50	Increase \$368.50	Increase 122%	Increase \$455.70	Increase 151%
Industrial - Large	\$61,000	\$57,523	Decrease \$3,477	Decrease 5.7%	Decrease \$2,906	Decrease 4.8%

Note: The estimates presented in Table C-3 for the Alternative Rate Structure are based on a per-account charge being assessed for the impervious surfaces of roadways, which are estimated at an additional 25 percent of the total for non-roadway EDUs. The estimates for the Recommended Rate Structure are taken from Table 13 in the report.

The advantage of this alternative rate structure is to the commercial sector, which will see a lower impact to its revised wastewater plus stormwater bill as illustrated in Table C-3. Industrial customers may also see more of a reduction. In contrast, residential ratepayers will see less of a reduction in their revised combined bills. The primary disadvantage of this alternative is its

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fundamental premise that all ratepayers should share equally in paying a stormwater rate assigned to the roadway surfaces. As a matter of practice, stormwater, water, and wastewater accounts are all assigned and paid by the ratepayer (either the property owner or the property tenant). In this alternative, stormwater account holders are assessed a stormwater rate as if they owned equal shares of the underlying property upon which the impervious surface is located. Of concern are legal issues associated with such an arrangement.