



## STAFF REPORT

**DATE:** March 29, 2024  
**TO:** City Council  
**FROM:** Leland Koester, Wastewater Services Manager/Project Manager  
**SUBJECT:** Stormwater Utility Analysis Update

### Report in Brief:

This report updates information provided to the city council at the August 8, 2023, work session concerning project status for the stormwater utility development. The report includes recommendations from the Stormwater/Wastewater Project Advisory Committee (Committee) and a schedule of next steps as the utility is considered.

### Background:

#### THE STORMWATER UTILITY CONCEPT

The stormwater utility analysis was initiated in July 2022 to explore more equitable and sustainable ways to fund operation of the stormwater system. The analysis began in October 2022 when the city contracted with the Galardi Rothstein Group to develop a financial needs assessment, rate alternatives, and to provide public engagement assistance. The Galardi team is well known and experienced in the development of stormwater utilities in Oregon. A memorandum from the Galardi Rothstein Group summarizing this analysis is included as [Attachment No. 1](#). Galardi has assisted city staff in developing financial analyses and policy options considered by the Committee.

A stormwater utility is a self-funded enterprise fund dedicated to meeting stormwater operating and capital requirements. The stormwater utility concept is broadly recognized, in Oregon and nationally, as an equitable and sustainable approach for management of a community's stormwater system. Stormwater utilities provide financial adequacy and stability to meet environmental regulations and construct and maintain critical infrastructure. Stormwater rates align system costs with customer use of the system and prevent wastewater and transportation system funds from being diverted to other uses.

Stormwater rates provide a mechanism for apportioning operating and capital expenses to users based on system demand and benefit, similar to the concept and practice used for the wastewater utility. Demands on the stormwater system are largely driven by runoff from impervious areas<sup>1</sup>. Consequently, over ninety percent of stormwater utilities nationwide use impervious areas as the basis for charging stormwater user fees.

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<sup>1</sup> Impervious areas prevent rain from soaking into the ground. Examples include residential rooftops, patios, and driveways roads, commercial structures, and parking lots, impervious cover prevents rain and snow from soaking into the ground, turning it into stormwater runoff.

The city retained the firm of Raftelis Financial Consultants, Inc. in April 2023 for GIS services to measure impervious areas for customers in the city. Their scope of work included impervious area measurements for a representative sample of single-family residential properties (400 parcels) and for all multifamily, commercial, industrial, and institutional properties in city limits. Raftelis completed their analysis of representative single family residential properties in June 2023 and measurements for all non-single-family properties in August 2023. Copies of Raftelis’ residential property analysis and nonresidential impervious area measurements are included as [Attachments No. 2](#) and [3](#) respectively.

#### INFRASTRUCTURE

The community’s stormwater system serves a watershed area of approximately 10,700 acres through an integrated system of catch basins, detention basins, open channels (drainageways, creeks) and storm sewers. The service area within the Urban Growth Boundary encompasses roughly 8,400 acres of the watershed. Our earliest records for the system date back to facilities constructed in 1911 that have continued in service for more than 100 years.

Stormwater facilities include:

- ▶ 3,665 catch basins
- ▶ 17 detention basins
- ▶ 45 miles of open channel drainageways
- ▶ 114 miles of storm sewers

These facilities require significant, sustained investments. Stormwater infrastructure is critical to minimizing health, life, and safety risks during flooding, protecting properties from damage due to localized flooding, protecting water quality by capturing sediments, heavy metals and nutrients bound to these solids, and reducing oil and grease from entering waterways.

#### CURRENT FUNDING

One of the community’s goals is to “...be responsible caretakers of our shared public assets and resources”. Absent a reliable and sustainable funding source, this goal cannot be met for the community’s stormwater system. There are long standing unmet system needs for preventive maintenance, replacement of aging infrastructure, and compliance with increasingly stringent regulatory requirements. Estimated current funding and expenses are shown in [Table 1](#) below.

[Table 1, Estimated current funding for the stormwater system](#)

Fund	Activity	Stormwater Expenses
Wastewater Fund	O&M, repairs, emergency response	\$60,000
Street Fund	Street sweeping, leaf program, repairs, and emergency response	\$440,000
General Fund <sup>1</sup>	Engineering support, regulatory compliance	\$120,000
<b>TOTAL</b>		<b>\$620,000</b>

<sup>1</sup>Supported by transfers from the Wastewater and Street funds.

The current level of funding addresses reactive needs only. A managed system with preventive maintenance, programed repairs and prioritized capital improvements is not possible within current funding levels. The stormwater system has taken a backseat to targeted needs for wastewater and transportation system needs. This lack of resources compromises the City’s efforts to be responsible environmental stewards.

Our current funding approach for the stormwater system does not equitably apportion costs based on demand and benefits. Wastewater user fees are based on the volume and strength of wastewater. Street Fund revenue

is funded primarily from gas taxes. Funding for wastewater and transportation programs have been reduced to meet essential stormwater demands. This funding approach limits the city's ability to buffer future wastewater rate increases and reduces the extent of preventive maintenance funds available to extend the service life of arterial and collector roadways.

#### REGULATORY ENVIRONMENT

The regulatory environment for management of stormwater quality, most recently with the Mercury Total Maximum Daily Load (TMDL), has resulted in unfunded mandates the city must comply with to avoid enforcement action. In addition to current TMDL regulatory requirements, McMinnville will be required to obtain a permit for stormwater discharged to local drainageways and the North and South forks of the Yamhill River. This permitting process is authorized by the federal Clean Water Act as part of the National Pollutant Discharge Elimination System (NPDES) and goes by the acronym MS4 (municipal separate storm sewer system). MS4 permits regulate operation and management of the community's stormwater system.

EPA and DEQ have the discretion to require smaller communities or groups of communities to operate under an MS4 permit. Albany, Ashland, Corvallis, Oregon City, and Wilsonville are examples where DEQ has exercised this discretion. We anticipate DEQ will require McMinnville to operate under an MS4 permit soon. Once in place, the MS4 permit will be a substantial, ongoing, and costly regulatory requirement. Specific elements of an MS4 permit may include:

- Development and implementation of a Stormwater Management Plan
- Stormwater management programs for new construction
- Erosion and sediment control programs
- Programs to reduce illicit discharges and ensure proper disposal of household hazardous wastes
- Development of a spill prevention and response program
- Ongoing water quality monitoring
- Implementation of TMDL Action Plans
- Programs to address discharges from industrial facilities

The city has a duty to comply with all elements of the MS4 permit or face enforcement actions by DEQ and possible third-party litigation. DEQ's specific language for non-compliance with permit conditions is cited below:

*The permittee must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of Oregon Revised Statutes (ORS) 468B.025 and the federal Clean Water Act and is grounds for an enforcement action. Failure to comply is also grounds for DEQ to terminate, modify and reissue, revoke, or deny renewal of a permit.*

McMinnville does not have dedicated funding to meet upcoming MS4 permit requirements. When issued, compliance with the permit will be required and is consistent with proactive management of community assets. Limited and unstable funding shortfalls need to be resolved to meet these additional regulatory requirements.

#### **Planning:**

The most recent Stormwater Master Plan was completed in 2009. It does not reflect current operating, capital, development, and regulatory needs. An updated facility master plan is needed to identify and prioritize operating expenses and capital improvements. A stormwater utility and dedicated funding mechanism will provide the resources to update the master plan. The utility will provide a base level of funding for operating expenses and build emergency reserves over the next few years. Following completion of the Stormwater

Master Plan, the stormwater utility will fund ongoing operations, maintenance and capital investment as identified in the plan.

### **Community Outreach:**

Our community outreach efforts to date have principally involved formation and support for the Committee. Additional efforts have included development of project websites (Engineering and iheartmac websites), newspaper articles, planned social media postings, an upcoming community-wide meeting, and city council work sessions.

### **PROJECT ADVISORY COMMITTEE**

The Stormwater/Wastewater Project Advisory Committee is a twelve-member volunteer group representing residential, commercial, industrial, and institutional customers. The purpose of the Committee is twofold.

1. Consider adoption of a stormwater utility, including recommendations to the city council concerning financial, rate structure and administrative policies, and
2. Make recommendations to the city council concerning proposed wastewater user fees, rate structure and sewer Systems Development Charges (SDC).

Committee members and the user groups they represent are shown as [Attachment 4](#). The Committee met four (4) times between October 2023 and March 2024. Each meeting spanned between two to three hours. Members also committed time to reviewing lengthy staff and consultant reports in advance of meetings, raising questions, and debating positions as policy recommendations were reached.

The Committee's recommendations are summarized below. In addition, John Kennedy, one of the Committee members, volunteered to attend the April work session to answer city council questions.

#### **Summary recommendation:**

***The Committee recommends the city council adopt a stormwater utility to fund stormwater related expenses more equitably.***

#### **Financial recommendations:**

##### Revenue requirements:

***The Committee recommends revenue requirements begin with a minimum level of service (approximately \$2 million) and transition to an interim level of service (approximately \$4 million) over a three-year period, consistent with the cash flow shown in Attachment 5.***

##### Revenue sources:

***The Committee recommends using stormwater user fees exclusively for stormwater utility services. The Committee further recommends resources be developed to fund the transportation system and that stormwater and transportation funding sources are coordinated.***

#### Minimum fund reserve

***The Committee recommends the stormwater utility build a minimum fund balance for emergencies equal to three-months of operating expenses. The Committee recommends the reserve be built over a three-year rate phase in period.***

#### Risk management:

***The Committee recommends expenses required to meet water quality regulatory requirements be fully funded to meet community values and avoid enforcement penalties and potential third-party litigation.***

#### Franchise fee deferral

***The Committee recommends the franchise fee be deferred for a minimum of three years and then considered as a dedicated transfer to the Street Fund.***

#### Assistance to low-income households

***The Committee recommends the Stormwater Utility participate in helping low-income households, similar to assistance provided by the Wastewater Fund.***

#### Rate recommendations:

##### Single family residential rate

***The Committee recommends single family residential properties be billed based on the median measured impervious area of 3,500 square feet (1 Equivalent Residential Unit, ERU). The Committee also recommends that attached single family properties be charged 0.7 ERUs to reflect their smaller impervious area.***

##### Shift to tiered residential rate structure

***The Committee recommends a single rate be used for single-family residential properties initially. Upon completion of the Stormwater Master Plan Update, the Committee strongly supports moving to a tiered rate structure for single family properties as a more equitable billing structure.***

##### Multifamily/Commercial/Industrial/Institutional rate

***The Committee recommends billings for non-single family residential properties be based on measured impervious areas and expressed in ERUs.***

##### Phasing, cash flow and rate survey update

***The Committee recommends stormwater utility rates be phased in over a three-year period. Anticipated rates, [Table 2](#), are shown on the following page. Projected cash flows based on this recommendation are shown in [Attachment 5](#). The phase-in period assumes initial implementation on January 1, 2025, to allow for billing system modifications and testing.***

Example rates for different customer classes over the recommended 3-year phase in period are shown below in [Table 2](#).

Table 2, Example monthly service charges by customer class

Monthly cost/ERU					
Phase 1 (2024)	\$	9.50			
Phase 2 (2025)	\$	12.50			
Phase 3 (2026)	\$	15.50			

Customer class	Impervious area (SQ FT)	ERUs (Rounded)	Minimum Level of Service (2024)	Phase 2 (2025)	Interim level of Service (2026)
Single Unit Residential	3,500	1.0	\$9.50	\$12.50	\$15.50
Single Unit Attached (per Unit)	2,450	0.7	\$6.65	\$8.75	\$10.85
Multi-Unit (Apartment Complex)	94,500	27.0	\$256.50	\$337.50	\$418.50
Commercial (small)	28,000	8.0	\$76.00	\$100.00	\$124.00
Commercial (large)	395,500	113.0	\$1,073.50	\$1,412.50	\$1,751.50
Industrial (small)	45,000	13.0	\$123.50	\$162.50	\$201.50
Industrial (large)	961,812	275.0	\$2,612.50	\$3,437.50	\$4,262.50
Institutional	255,500	73.0	\$693.50	\$912.50	\$1,131.50

A rate comparison of Oregon stormwater utilities residential rates is shown as [Figure 1](#). The comparison shows proposed rates for Fiscal Year (FY) 24/25 (\$9.50/ERU/month) and an interim service level rate of \$15.50 in FY26/27. Note that rates for other communities are current and expected to increase by FY 26/27.

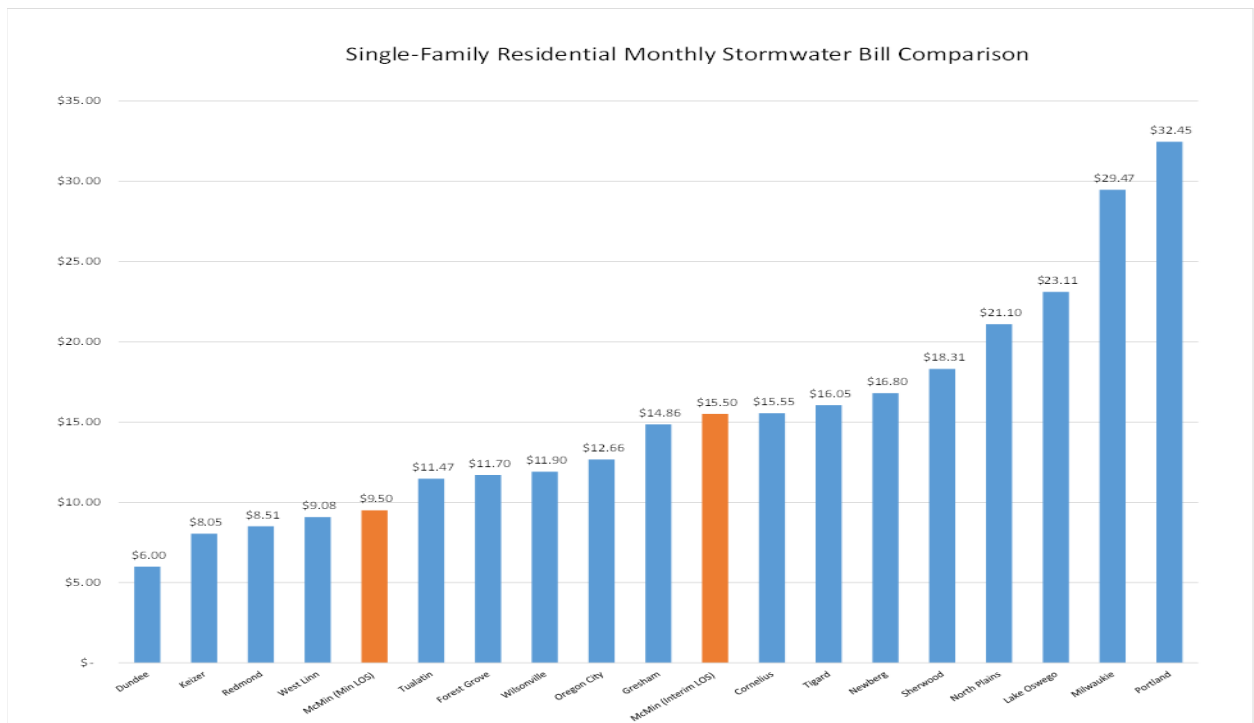


Figure 1, Single family residential stormwater utility rates for Oregon communities (monthly)

## Billing recommendations:

### Billing for city and McMinnville Water and Light properties

***The Committee recommends city and McMinnville Water and Light (MWL) properties not be billed for stormwater service, similar to billing policies used for water and wastewater services.***

### Coordination with McMinnville Water and Light

***The Committee recommends the city work with McMinnville Water and Light to incorporate stormwater utility billing into their monthly billing statements.***

### Minimum impervious area for non-residential billing

***The Committee recommends a minimum billable impervious area of 500 square feet be used for billing non-single family residential properties.***

### Rounding for non-residential customers

***The Committee recommends billing for non-single family residential properties be rounded up to the nearest whole ERU.***

### Discounts/credits

***The Committee recommends a 35% discount be given to non-single-family dwellings that are fully self-contained, discharge to streams or rivers not maintained by the city and that are regulated by discharge permits from the State Department of Environmental Quality.***

***The Committee does not recommend discounts or credits for privately maintained stormwater systems be granted until further considered as part of the Stormwater Master Plan Update.***

### Administrative billing appeal

***The Committee recommends the implementing ordinance adopting the stormwater utility include a provision for administrative appeals to reconcile any errors or changes in measurement of impervious areas.***

## Planning recommendations:

### Stormwater Master Plan Update

***The Committee recommends updating the Stormwater Master Plan Update be a high priority for the stormwater utility and that it be completed within three-years of adopting the utility.***

## PROJECT WEBSITE

The stormwater utility analysis has been included in the Engineering and in the iheartmac websites. Staff reports for each meeting, PowerPoint presentations, video recordings and frequently asked questions (FAQ) are accessible on these websites.

#### NEWSPAPER

The NewsRegister has reported on the stormwater utility concept at the initial city council work session and following Committee meetings.

#### SOCIAL MEDIA

The stormwater utility project has recently been posted on the city's social media webpages.

#### COMMUNITY MEETING

A community meeting is scheduled for May 9, 2024, from 6:00 pm to 8:00 pm. The meeting is an opportunity to share information about the stormwater utility, including equity, infrastructure and regulatory demands, answer questions and listen to suggestions and concerns.

#### CITY COUNCIL WORK SESSIONS

Staff presented project status and schedule for the stormwater utility at the August 8, 2023, city council work session. Staff will update the city council following the community meeting at a work session in June or July 2024. An ordinance to adopt the stormwater utility will be scheduled as an action item for a city council meeting early this summer.

#### **Next steps**

Our next steps involve continued efforts to engage with the community and work closely with McMinnville Water and Light to update their billing software and develop billing inserts. The schedule, [Attachment No. 6](#), shows the stormwater utility going into effect on January 1, 2025, and first revenue received in February 2025.

#### Attachments:

1. Galardi/Rothstein Preliminary Stormwater Utility Analysis
2. Raftelis, single-family residential impervious area
3. Raftelis, non-single family residential impervious area measurements
4. Project Advisory Committee members
5. Projected cash flow table
6. Project schedule





## MEMORANDUM

# Stormwater Rate Development

### Attachment No. 1

**PREPARED FOR:** Anne Pagano, Public Works Director  
**PREPARED BY:** Deb Galardi, Galardi Rothstein Group  
**SUBJECT:** Stormwater Utility Study  
**DATE:** July 13, 2023

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## Introduction

The City of McMinnville (City) is considering implementation of a stormwater utility and dedicated user fee to fund stormwater management. Galardi Rothstein Group was engaged by the City to assist in the development of a stormwater system funding plan and evaluation of rate structures and other program elements.

Stormwater utilities have been implemented by dozens of cities in Oregon to provide equitable and dedicated funding to meet regulatory requirements, and system operation, maintenance, and replacement needs. The chart attached illustrates a range of stormwater monthly rates charged in Oregon (based on 2021 data).

This memorandum summarizes key elements to be addressed as part of the stormwater utility development.

## Stormwater Utility Development

### *Annual Revenue Requirements*

As with the wastewater utility, annual stormwater funding requirements include capital and operation and maintenance costs, as well as policy-based set-asides for contingencies and reserves. Specific cost elements to be considered for stormwater include:

- Inspection and maintenance activities
- Regulatory compliance activities
- Public education
- Technical services

- Customer service
- Administration
- Capital improvements.

In estimating annual revenue needs, the project team is considering costs of existing activities (e.g., street sweeping, limited cleaning and inspection of stormwater lines and other assets) that are currently funded from wastewater rates or street funds, as well as additional costs needed to meet regulatory, environmental, safety, and system reliability needs. Different funding “packages” will be identified for the City Council’s consideration to allow balancing of desired levels of service against customer rate impacts.

### ***Stormwater Rate Structure***

Site impervious area is the most common basis for recovering stormwater utility costs from customers, as it provides an indirect measure of stormwater discharge that has implications for stormwater management. Stormwater utility rate structures may also include per-account or dwelling unit charges for recovering costs that relate to customer services, billing, and in some cases, water quality and quantity costs associated with impervious area in the public right-of-way.

The determination of the portion of annual costs to be recovered from impervious area or other account or unit charges has direct implications on the distribution of costs to customer types (e.g., residential vs. commercial) and different sizes of customers. The project team is currently developing customer impervious area measurements for purposes of developing stormwater rate structure options. Once that process is complete, specific rate options will be developed and presented to the City Council for consideration.

### ***Rate Modifiers***

It is common practice for stormwater utilities to include credit or discount programs for private activities or investments that reduce a customer’s impact on the stormwater system. Credit programs may include incentives for runoff volume or flow control, or water quality. Development of the credit program must balance customer incentives against the additional administrative costs associated with program implementation and monitoring.

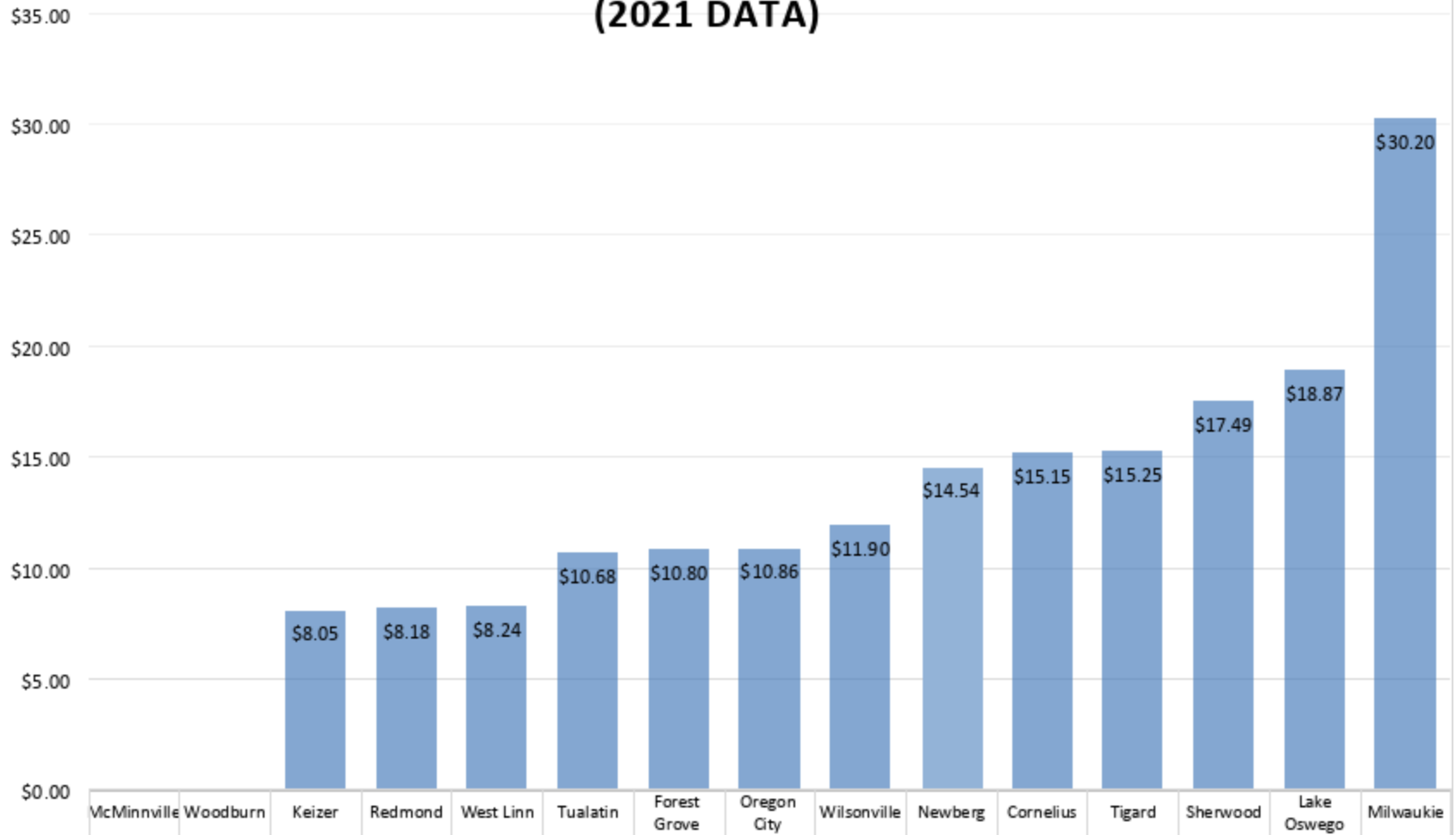
Like the City’s other rates, the stormwater rate structure may include policy-based discounts for customers experiencing financial hardships or other circumstances, and stormwater-specific exemptions (e.g., undeveloped parcels). Credit program options and other rate policies will be considered in the context of the rate structure and funding plan development.

## **Implementation Plan**

Concurrent with development of the funding plan and rate structure will be the development of the implementation plan which will require coordination across multiple City departments and with McMinnville Water and Light to develop the legal, financial, and customer billing

framework to implement the utility and the associated charges. More details on implementation steps will be provided to the City Council at future meetings.

## SAMPLE RESIDENTIAL STORMWATER MONTHLY BILLS (2021 DATA)



## City of McMinnville, Oregon Stormwater ERU Analysis June 8, 2023

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The following analysis and results are presented by Raftelis to the City of McMinnville (City) in support of Task 1 of the Stormwater Utility Implementation Data Development project. This task includes the determination of an Equivalent Residential Unit (ERU) for the City, which is a billing unit often used by stormwater utilities with impervious area-based rate structures. An ERU reflects the typical amount of impervious area on a single family residential (SFR) parcel and allows for simplified billing of the largest customer group - single family properties. Impervious surface area is the most common rate structure among those communities with stormwater fees because it is a good measure of a ratepayer's demand on the stormwater system. The more impervious area on a property, the more stormwater the property generates and the greater the demand for the utility's stormwater management services. Raftelis' determination of the City's ERU is based upon the impervious area digitization analysis described below. The information provided in this memo describes Raftelis' methodology for completing this Task and the results of our analysis.

### Data

Raftelis' analysis was based on 2022 aerial imagery and Yamhill County geographic tax parcels provided by the City in January and April 2023.

### Methodology

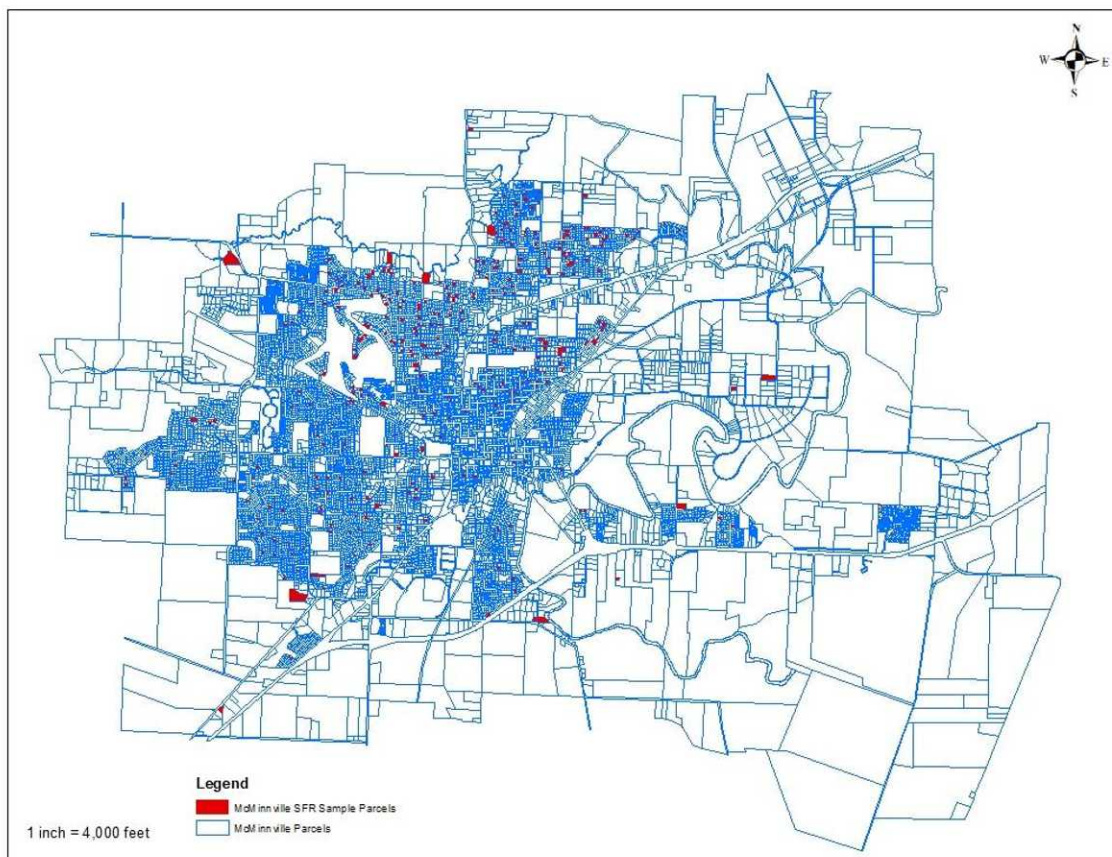
A Raftelis GIS analyst began by generating a random sample of 400 parcels falling into one of the following Yamhill County Tax property class code (PCA) categories that represent the SFR class:

PCA Category	Parcel Count in Sample
101	322
109	11
111	18
121	2
191	2
207	31
401	6
409	3
451	1
551	3

PCA 101 also includes duplex and single-family attached (SFA) property types. Often, duplex properties have impervious area measurements and overall development patterns substantially similar to single family properties and are therefore good candidates for including in the SFR customer class. Therefore, Raftelis included them in this analysis. SFA properties were not

included in this sample and their impervious area will be measured and evaluated separately under Task 2 of our Scope of Services. The results of that analysis will be provided under separate cover. PCA 207 includes mobile home and manufactured home types, some of which have one dwelling per parcel and some of which have multiple dwellings per parcel. Only those with one dwelling per parcel were included in the population for this sample. Those with multiple dwellings per parcel are considered multi-family properties and their impervious area will be measured under Task 3 of our Scope of Services.

The sample size was selected to provide 95% confidence that the ERU value is within 5% of true value (margin of error) and is representative of the population of the City's SFR properties. We also performed a visual and tabular review of the resultant sample properties to verify that they encompassed a representative range of geography, structure age, and housing type. In some cases, an original randomly selected sample property was obscured by vegetation and could not be accurately measured. In these cases, the analyst removed the obscured parcel from the review and replaced it with an additional randomly selected parcel. The final sample list is attached as Appendix A, and a map of the final, measured sample parcels throughout the City is shown below in Figure 1. The final, measured sample of SFR property types are highlighted in red, while other parcels are in blue. Please note that some parcel identification numbers (PIN) are duplicated, as parcels within the PCA 207 group have identical PIN numbers if they are within the same development and are distinguished in the tax parcel data by lot codes. Lot codes for those parcels are also provided in Appendix A.



*Figure 1. City of McMinnville Sample Distribution*

Using ArcGIS, overlaying parcels on top of 2022 aerial imagery, the analyst created new spatial features to represent the impervious area on each property based on visual assessment of the property and met the definition of “impervious”. Impervious area was defined as “hard surfaces that don’t allow infiltration of stormwater into the ground.” Examples of impervious surface include rooftops, driveways, patios, private sidewalks, parking lots and compacted gravel. Swimming pool water, railroad ballast, open graded aggregate and landscaping gravel are not considered impervious surfaces. The impervious area polygons were created to match the footprint on the ground of these surfaces, rather than rooflines which may be obscured by the angle of the aerial photography.

Figure 2 provides a selection of digitized SFR property types. The sample property is outlined in bright green, the impervious area features created by Raftelis are translucent yellow. Per the impervious surface definition, swimming pools and landscaped areas are excluded, and outbuildings, if any, are included.



*Figure 2. Example of SFR Properties' Impervious Area Digitization (photos not at the same scale)*

### **ERU Results**

Raftelis' 400 sampled parcels had a wide range of impervious area amounts, from a minimum of 658 square feet to a maximum of 15,970 square feet. Raftelis recommends using the median value of impervious area on SFR properties to calculate the ERU. Compared with the mean (average) impervious area, the median is more statistically robust, and less sensitive to outliers, the very small or very large impervious surface amounts in the sample, and therefore a more accurate representation of typical SFR impervious area within the City. Based on the median value, the ERU value for McMinnville is 3,512 square feet of impervious area. The distribution of sampled impervious area for the sample, with the median demarcated, is shown in Figure 3 below.

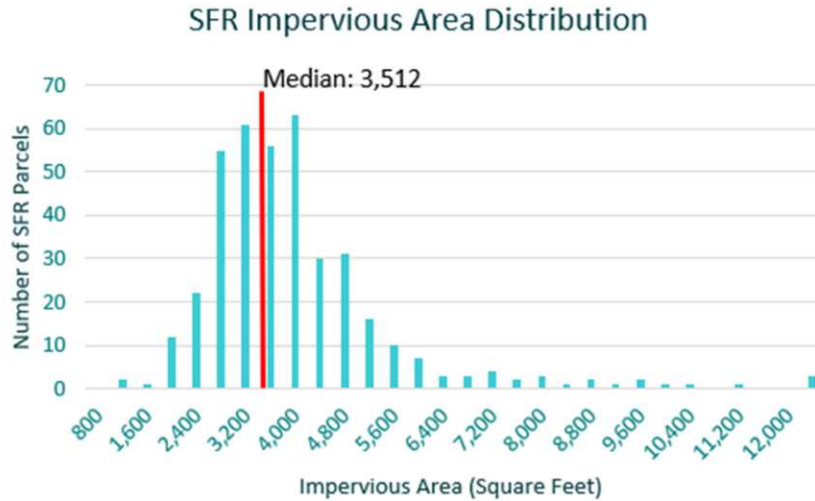


Figure 3. Impervious Area Distribution for SFR Properties in the McMinnville ERU Sample

### Benchmarking

At the request of the City, Raftelis compared the McMinnville ERU to the ERU values for other similarly sized stormwater utilities in the State of Oregon. The 2021 populations of these cities range from approximately 20,000 to 60,000, except for the City of Medford (~86,000) and the City of Bend (~102,000). Those values in comparison to the City's ERU value are provided in Figure 4 below.

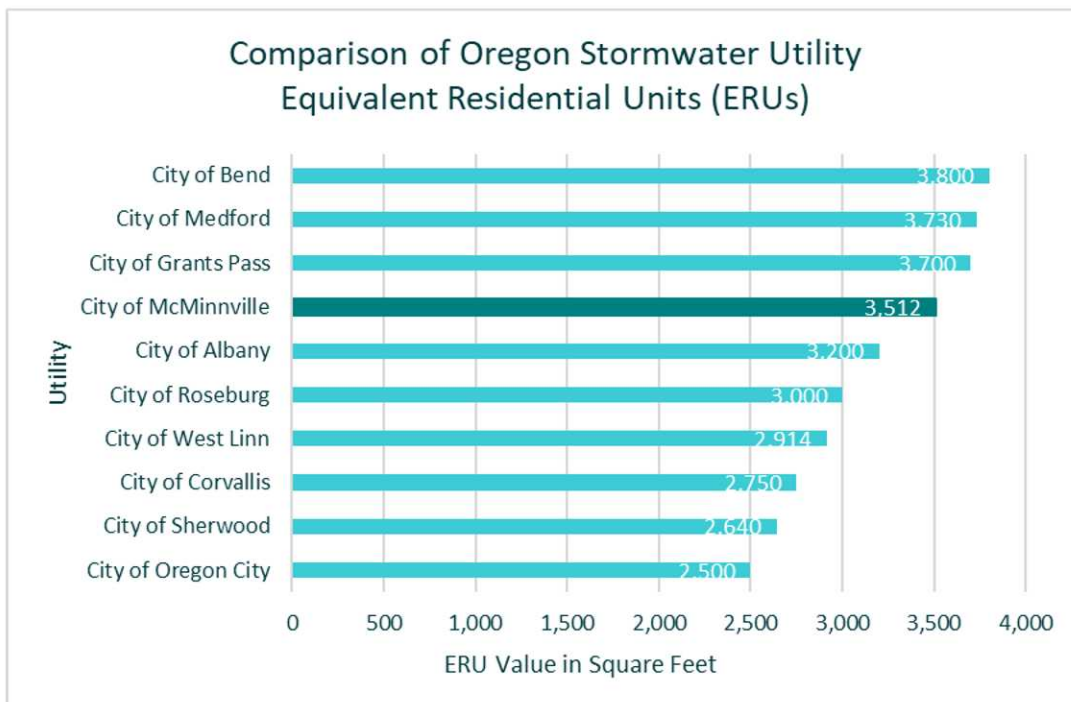


Figure 4. Comparison of ERU Values in Oregon Stormwater Utilities



**Appendix A**  
**Final SFR Sample Parcel ID Number and Lot Numbers**

<b>Parcel Identification Number</b>	<b>Lot Code</b>
R4409 00700	
R4409 02000	Lot 92
R4409 02000	Lot 1
R4409 02000	Lot 39
R4409 02000	Lot 31
R4409 02000	Lot 85
R4409 02000	Lot 82
R4409 02000	Lot 77
R4409 02000	Lot 75
R4409 02000	Lot 26
R4409 02000	Lot 12
R4409 02004	
R4409CA04700	
R4409CA04800	
R4409CA05600	
R4409CA05700	
R4409CA10000	
R4409CA11500	
R4409CA12200	
R4409CA13000	
R4409CA14100	
R4409CA14800	
R4409CA15200	
R4409CA18300	
R4409CA19900	
R4409CA20500	
R4409CA21500	
R4409CB02500	
R4409CB04300	
R4409CD00204	
R4409CD00208	
R4409CD00212	
R4409CD00213	
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R4416DB06300	
R4416DB09000	
R4416DB09100	
R4416DC00600	
R4416DC01700	
R4416DC02400	
R4416DC02800	
R4416DC02900	
R4417 00200	
R4417 00200	
R4417 00301	
R4417 01106	
R4417AC00900	
R4417AC02303	
R4417AC02304	
R4417AC02305	
R4417AC02319	
R4417AC02327	
R4417AC02349	

R4417AD00400	
R4417AD01000	
R4417AD02900	
R4417AD03200	
R4417AD04100	
R4417AD04400	
R4417AD05600	
R4417AD08400	
R4417AD08600	
R4417AD09900	
R4417AD10400	
R4417AD12000	
R4417BA01500	
R4417BA02500	
R4417BA02700	
R4417BA02900	
R4417BA03300	
R4417BA04500	
R4417BA05800	
R4417BA06800	
R4417BA08000	
R4417BA08100	
R4417BB02100	
R4417BB03600	
R4417BB03700	
R4417BB05100	
R4417BB05300	
R4417BB05500	
R4417BB06300	
R4417BB07001	
R4417BB08300	
R4417BC01700	
R4417BC02500	
R4417BC03000	
R4417BD03000	
R4417BD04100	
R4417BD06300	
R4417BD06600	
R4417BD06900	
R4417CB00400	
R4417CB00500	
R4417CB01990	
R4417CB02600	

R4417CB02800	
R4417CB02900	
R4417CB03200	
R4417CC00300	
R4417CC00500	
R4417CC00800	
R4417CC02000	
R4417DA00200	
R4417DA02500	
R4417DA03501	
R4417DA03700	
R4417DA04401	
R4417DA04903	
R4417DA07600	
R4417DA08600	
R4417DA08700	
R4417DA10400	
R4417DA10500	
R4417DA11617	
R4417DA11700	
R4417DB00400	
R4417DB00700	
R4417DB02200	
R4417DB04700	
R4417DB05800	
R4417DB06202	
R4417DB06700	
R4417DB07500	
R4417DB07700	
R4417DB09200	
R4417DB10000	
R4417DC00300	
R4417DC02000	
R4417DC02300	
R4417DC05100	
R4417DD04200	
R4417DD13600	
R4417DD14400	
R4417DD16000	
R4418 01500	
R4418AA00500	
R4418AA02300	
R4418AA02800	

R4418AC00500	
R4418AC01700	
R4418AD03600	
R4418AD04200	
R4418AD04600	
R4418AD16300	
R4418DB06800	
R4418DB10100	
R4418DB11400	
R4418DB12106	
R4418DD05800	
R4419AA03700	
R4419AA04800	
R4419AA10100	
R4419AC00211	
R4419AD00106	
R4419AD00609	
R4419AD00615	
R4419AD00618	
R4419BA00632	
R4419BA02900	
R4419BB01500	
R4419CA01600	
R4419CA07252	
R4419CB02200	
R4419DB00139	
R4419DB02300	
R4419DC08209	
R4419DC08300	
R4419DC09800	
R4419DD09200	
R4419DD15200	
R4420AA01100	
R4420AA01300	
R4420AA04300	
R4420AA09501	
R4420AA12700	
R4420AB01500	
R4420AB03201	
R4420AB06900	
R4420AC00721	
R4420AC01402	
R4420AC01900	



R4420AD04700	
R4420AD06700	
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R4420BB01400	
R4420BB01400	
R4420BB19000	
R4420BC00508	
R4420BC00508	
R4420BC00514	
R4420BC02400	
R4420BC02400	
R4420CA02703	
R4420CA03405	
R4420CB00801	
R4420CB01222	
R4420CB01611	
R4420CB01709	
R4420CB01731	
R4420CB01804	
R4420CB01810	
R4420CC00125	
R4420CC00138	
R4420CC00200	
R4420CC00307	
R4420CC02000	
R4420CC06900	
R4420CD01704	
R4420CD02800	
R4420CD03018	
R4420CD03800	
R4420CD04900	
R4420DA02701	
R4420DA02901	
R4420DA06400	
R4420DA06805	
R4420DB03000	
R4420DB03600	
R4420DC03700	
R4421BB07200	
R4421BB08100	
R4421BB11200	

R4421BD07800	
R4421BD09101	
R4421CB05100	
R4421CB13300	
R4421CD04700	
R4421CD07800	
R4421CD07916	
R4421DB00600	
R4421DD00902	
R4421DD00904	
R4422 03500	
R4422DD01300	
R4422DD06700	
R4424C 00200	Lot 154
R4424C 00200	Lot 228
R4424C 00200	Lot 14
R4427 01000	
R4428BA01900	
R4428BC00310	
R4428BC01110	
R4428BC02016	
R4428BD01500	
R4428BD01807	
R4428D 00200	
R4428D 00200	
R4429 02501	Lot 2
R4429AB05102	
R4429BA03901	
R4429BA08900	
R4429BA11100	
R4429BA14300	
R4429BB00500	
R4429BC04921	
R4429BC05000	
R4430 00102	Lot 56
R4430 00102	Lot 107
R4430 00102	Lot 44
R4430AA02921	
R4430AA03000	Lot 91
R4430AB00100	Lot 212
R4430AB00100	Lot 165
R4430AB00100	Lot 23
R4430AB00100	Lot 185

R4430AB00100	Lot 145
R4430AD00400	
R4430AD00400	
R4430DC01800	
R4430DC02000	
R4430DD09200	
R4431 01400	
R4524AD05800	
R4524DA00500	
R4524DA02100	
R4524DA02900	
R4524DB00100	
R4524DB01900	
R4524DB03800	
R4524DB04800	

## City of McMinnville, Oregon

### Stormwater Utility Implementation Data Development for Single-Family Attached and Non-Single Family Residential Properties September 5, 2023

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The following analysis and results are presented by Raftelis to the City of McMinnville (City) in support of Tasks 2 and 3 of the Stormwater Utility Implementation Data Development project. Task 2 included measurement of impervious area for single-family attached (SFA) properties in the City and their associated common areas and evaluating options for billing those properties by the City's proposed stormwater utility. Task 3 included impervious area measurements of non-single family residential (NSFR) properties in the City. Raftelis then used the calculated impervious area data and the Equivalent Residential Unit (ERU) calculated in Task 1 (and documented in Stormwater ERU Analysis Memorandum dated June 8, 2023, provided under separate cover) to determine draft units of service for the stormwater utility with billing units provided for each parcel in the City. The information provided in this memo describes Raftelis' methodology for completing these Tasks and the results of our analysis.

#### Data

Raftelis' analysis was based on 2022 aerial imagery and Yamhill County geographic tax parcels provided by the City in January and April 2023, respectively.

#### Impervious Area Digitization Methodology

Raftelis identified parcels with Yamhill County Tax property class codes (PCA) that represent the SFA and NSFR classes. PCA 102 is the primary code for SFA properties, but some SFA properties were also identified in PCA 100 and 101 and PCA 003 represents some SFA common area parcels. (Note PCA 003 also includes some NSFR parcels that are not associated with SFA properties). Table 1 includes the number of SFA properties in each PCA code. A total of 282 SFA properties within 9 SFA communities were evaluated in Task 2.

*Table 1. Number of SFA Parcels by PCA Code*

PCA	Number of SFA Parcels
003	17
100	2
101	123
102	140

Parcels that were not classified as SFR (Task 1) or as SFA (Task 2) were classified as NSFR. They encompass a large number of PCA codes, with 35 parcels having no assigned PCA code. Table 2 includes the number of NSFR properties in each PCA code. A total of 1,613 NSFR properties were evaluated in Task 3.

Table 2. Number of NSFR Parcels by PCA Code

PCA	NSFR Parcel Count
No Assigned PCA	35
3	46
10	1
23	6
24	2
120	1
181	3
200	50
201	456
202	23
204	13
207	16
211	26
231	6
251	1
300	49
301	112
320	2
321	11
331	5
333	30
350	3
401	4
440	1
449	1
450	1
451	1
471	1
501	1
520	1
530	7
540	27
541	32
549	2
550	8
551	67
554	1
559	7
700	3
701	84
721	4
781	6
900	1
901	11
909	2
910	13
911	47
920	16
921	41
930	2
931	2
940	145
941	30
942	2
943	2
950	14
951	45
960	6
961	2
970	1
971	6
980	30
981	28
990	1
991	10

Using ArcGIS, overlaying parcels on top of 2022 aerial imagery, Raftelis created new spatial features to represent the impervious area on each property based on visual assessment of the property that met the definition of “impervious”. Impervious area was defined as “hard surfaces that don’t allow infiltration of stormwater into the ground.” Examples of impervious surface include rooftops, driveways, patios, private sidewalks, parking lots and compacted gravel. Swimming pool water, railroad ballast, open graded aggregate and landscaping gravel are not considered impervious surfaces. The impervious area polygons were created to match the footprint on the ground of these surfaces, rather than rooflines which may be obscured by the angle of the aerial photography.

Figure 1 provides an example of impervious area digitization on an SFA community with multiple residences and associated common area. Figure 2 provides an example of impervious area digitization on an NSFR property. Sample properties are outlined in bright green and the impervious area features created by Raftelis are translucent yellow.



*Figure 1. Example of SFA community Impervious Area Digitization (figures not at the same scale)*



*Figure 2. Example of NSFR parcel Impervious Area Digitization (figures not at the same scale)*

### SFA Impervious Area Analysis

While SFA properties are like SFR properties, in that the dwelling units are on their own individual tax lots, SFA properties differ from SFR properties because they share a common area space that often has impervious area associated with private roadways, walkways, parking spaces, and recreational facilities. Therefore, to calculate the total impervious area associated with the SFA property, Raftelis measured impervious area associated with each SFA dwelling unit and the SFA development's common area impervious area. The total impervious area, both dwelling units and common area combined, was divided by the number of dwelling units in the development to calculate the impervious area per dwelling unit. Raftelis then divided the impervious area per unit by the City's ERU value (3,500 square feet) for a per unit ERU value ('Unit ERUs'). As an example, for the SFA development with Parent Parcel ID R4416AB90003, Raftelis subtracted the total parcels (31) in the development by the number of common area parcels (1) in the development to equal the unit count (30). The total impervious area for the development was measured at 58,290.04 square feet, which was divided by 30 units for as impervious area per unit of 1,943 square feet. The IA per unit was divided by the ERU value of 3,500 to calculate the Unit ERUs of 0.6 for this community. Raftelis also computed the group's average Unit ERUs, which is 0.7 ERUs. Table 3 below provides the impervious area measurements and ERU values for each community.

*Table 3. SFA Impervious Area and ERU Values*

Parent_Par	Total Parcel Count	Common Area Parcel Count	Unit Count	Impervious Area (sq. ft.)	IA per Unit	Unit ERUs
R4416AB90003	31	1	30	58,290.04	1,943.00	0.6
R4417CC90000	24	2	22	71,720.55	3,260.03	0.9
R4417CD90100	25	1	24	90,623.60	3,775.98	1.1
R4418DB12131	29	1	28	44,792.54	1,599.73	0.5
R4419AD00660	20	0	20	29,423.51	1,471.18	0.4
R4419DB03906	23	2	21	42,473.95	2,022.57	0.6
R4420BA00200	62	6	56	179,447.97	3,204.43	0.9
R4421CC90000	38	1	37	45,005.40	1,216.36	0.3
R4423 90000	30	3	27	91,911.06	3,404.11	1.0
					<b>Average</b>	<b>0.7</b>

### SFA Options and Selected Option

The City considered options for the SFA properties' rate structure that were both fair and would control administrative burden. Options included treating the communities as NSFR properties, developing a community specific per-unit flat charge, and developing a classwide per-unit charge. The first two options are almost identical, in effect, and present an increased administrative burden in comparison with a classwide per unit charge. Under the first two options, either the total ERUs or per 'Unit ERUs' would be billed that vary by community based upon their impervious area measurements. Under the third approach, all SFA properties would be charged the classwide per unit ERU value of 0.7.

Raftelis recommends that the City adopt the classwide SFA unit value of 0.7 ERUs and bills each SFA dwelling, for one unit charge. The SFA properties are fairly similar in impervious area characteristics and can be billed at a flat rate similarly to SFR properties (where the City is planning to bill them all 1 ERU). Common area parcels would not receive a stormwater bill, as under this methodology their impervious area has been allocated among their associated SFA units. It should be noted that the account and meter configurations for all of the SFA communities are not all known, but is believed that the number of units for each community is a billing operand in the McMinnville Water and Light billing system that City's stormwater bills are likely to be

conveyed on, as it is used for wastewater charges. Thus, the per unit charge can be applied to the units associated with each account.

### **NSFR Impervious Area Analysis**

The impervious area for each NSFR parcel was measured and divided by the ERU value (3,500 sq. ft) to calculate the total ERUs per parcel. Raftelis recommends that the total ERU value be rounded up to the whole integer for billing purposes. Raftelis recommends that NSFR parcels with less than 350 sq. ft. of impervious area be assigned zero ERUs and exempted from stormwater utility billing.

### **Draft Units of Service**

Upon completion of the impervious area digitization, Raftelis assigned each parcel an ERU value by customer class, with SFR parcels being assigned an ERU of 1, SFA parcels being assigned an ERU of 0.7, and NSFR parcels being assigned a total ERU value as described in the NSFR Impervious Area Analysis section above. Raftelis summed the ERUs by customer class and for the entire proposed stormwater utility service area (Table 4). These units of service are draft and subject to change based upon finalization of billing policies discussed in this document (SFA ERUs, minimum impervious area and ERU rounding) and other billing policies which have yet to be finalized (customer exemptions, parcel aggregation, etc.).

*Table 4. Draft Stormwater Units of Service by Parcel Class*

<b>Parcel Class</b>	<b>Number of ERUs</b>
SFR	<b>9,985</b>
SFA	<b>188.3</b>
NSFR	<b>17,886</b>
<b>TOTAL</b>	<b>28,059.3</b>



## Attachment 4 – Stormwater/Wastewater Project Advisory Committee

City Council liaison: Councilor Zack Geary

<b>Committee Member</b>	<b>Organization</b>	<b>Representing</b>
Mark Davis	Residential at large	Residential customers
Kent Stevens	Residential at large	Residential customers
Kori Gormley	Residential at large	Residential customers
John Kennedy	Residential at large	Residential customers
Peter Enticknapm	Residential at large	Residential customers
Lisa Allen	Heater Allen Brewing	Commercial customers
Dean Klaus	Dean Klaus Construction	Commercial customers
Jim Spahr	Cascade Steel	Industrial customers
John Dietz	McMinnville Water and Light	Institutional customers
Brian Crain	McMinnville School District	Institutional customers
Blake Bestul	Linfield University	Institutional customers
Bruce Cook	Integrity Builders	Development community

**Attachment 5– Projected cash flow**

Stormwater Utility						
<b>Projected Phased Cash Flow</b>						
Item	FY2024/25 Delayed Imp.	Phase-In Period			Post-Master Plan	
		2025/26	2026/27	2027/28	2028/29	
<b>Beginning Balance</b>	\$0	\$250,000	\$411,077	\$641,378	\$773,747	
<b>Monthly Rate (\$/ERU)</b>	\$9.50	\$12.50	\$15.50	\$16.04	\$16.60	
Equivalent Residential Units (ERUs)	21,692	21,801	21,910	22,019	22,129	
Creditable ERUs	(361)	(361)	(361)	(361)	(361)	
Billable ERUs	21,331	21,440	21,549	21,658	21,768	
% of Initial FY Effective	42%	100%	100%	100%	100%	
<b>Estimated Sales Revenue</b>	<b>1,013,237</b>	<b>3,215,964</b>	<b>4,008,070</b>	<b>4,169,442</b>	<b>4,337,309</b>	
Other Revenue						
Other fees and charges	\$0	\$0	\$0	TBD	TBD	
Interest Income	-	2,500	4,111	6,414	7,737	
System Development Charges	-	-	-	TBD	TBD	
Transfers - Wastewater	-					
<b>Total Resources</b>	<b>1,013,237</b>	<b>3,218,464</b>	<b>4,012,181</b>	<b>4,175,856</b>	<b>4,345,047</b>	
<b>Revenue Requirements</b>						
Personnel	\$128,569	\$ 658,829	\$ 1,009,094	\$ 1,044,412	\$ 1,080,967	
Contractual Maintenance	127,083	393,526	482,051	498,923	516,385	
Equipment		-	72,843	75,393	78,032	
Equipment Maintenance		-	21,425	22,174	22,950	
Billing - MWL	62,500	155,250	160,684	166,308	172,128	
City Support Services	20,833	116,054	182,108	188,482	195,079	
Interfund Loan	77,114	77,114	77,114	-	-	
Franchise Fees	60,794	192,958	240,484	250,167	260,239	
Capital Outlay	-	-	900,000	925,000	950,000	
Professional Service	-	-	225,000	231,250	237,500	
Master Planning	286,343	1,213,657	-	-	-	
<b>Total Requirements</b>	<b>\$763,237</b>	<b>\$2,807,388</b>	<b>\$3,370,803</b>	<b>\$3,402,109</b>	<b>\$3,513,280</b>	
<b>Ending Fund Balance</b>	<b>\$250,000</b>	<b>\$411,077</b>	<b>\$641,378</b>	<b>\$773,747</b>	<b>\$831,767</b>	
Unreserved	-	11,077	(8,622)	23,747	6,767	
Reserved (Contingency)	250,000	400,000	650,000	750,000	825,000	
<b>Total Sources</b>	<b>\$1,013,237</b>	<b>\$3,218,464</b>	<b>\$4,012,181</b>	<b>\$4,175,856</b>	<b>\$4,345,047</b>	
<b>Total Uses</b>	<b>\$1,013,237</b>	<b>\$3,218,464</b>	<b>\$4,012,181</b>	<b>\$4,175,856</b>	<b>\$4,345,047</b>	

## Attachment 6 – Project schedule

### DEVELOPMENT/ADOPTION SCHEDULE

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#### MARCH 2024

- ▶ March 13, 2024 (Wednesday) Project Advisory Committee Meeting No. 4

#### APRIL 2024

- ▶ April 4, 2024 (Thursday) Staff report for April 17, 2024, CC work session
- ▶ April 17, 2024 (Wednesday) CC work session, PAC recommendations

#### MAY 2024

- ▶ May 9, 2024 (Tuesday) City hosts community meeting
- ▶ May 17, 2024 (Friday) GIS database merge completed
- ▶ May 28, 2024 (Tuesday) CC update from community meeting

#### JUNE 2024

- ▶ June 11, 2024 (Tuesday) CC public hearing, adopt of stormwater utility
- ▶ June 25, 2024 (Tuesday) CC public hearing continued, adopt ordinance  
City approves MWL MOU, scope and fee

#### JULY 2024

- ▶ July 9, 2024 (Tuesday) CC adopts IGA
- ▶ July 16, 2024 (Tuesday) MWL approves MOU
- ▶ July 17, 2024 (Wednesday) MWL issues NTP to software vendor

#### AUGUST 2024

- ▶ August 30, 2024 (Friday) MWL vendor begins software update

#### SEPTEMBER 2024

- ▶ September 17, 2024 (Tuesday) MWL/City, meeting with software vendor

#### OCTOBER 2024

- ▶ October 15, 2024 (Tuesday) Software vendor completes billing system update.

#### NOVEMBER 2024

- ▶ November 1, 2024 (Friday) MWL first test run of billing software

#### DECEMBER 2024

- ▶ December 2, 2024 (Monday) MWL second test run of billing software

#### JANUARY 2025

- ▶ January 1, 2025 (Wednesday) Effective date to start stormwater utility

#### FEBRUARY 2025

- ▶ February 3, 2025 (Monday) Effective date to begin collecting revenue