Introduction

The purpose of system development charges (SDCs) is to maintain equity between existing customers and new customers connecting to the City's storm drain system. The objective of a SDC is to calculate the cost-based charges for new customers connecting to, or existing customers requesting additional capacity on, the City's storm drain system. By establishing cost-based storm drain SDCs, the City attempts to have the growth pay for growth by having new customers pay their proportional share of the infrastructure in place which will serve them, while also reimbursing the existing utility customers for funding the financial impacts of growth.

HDR Engineering Inc. (HDR) was retained by the City of Manzanita (City) to update the City's storm drain SDC. The City has a current storm drain SDC of $174 per equivalent service unit (ESU). The SDC has not been reviewed or updated since 1996. The City through adopted City Ordinance 91-4, Section 4, allows for the SDCs to be updated annually for inflationary cost impacts every January, based on the Engineering News Records Construction Index (ENR-CCI) for Seattle, Washington. Since the implementation of the current SDC, the City has not made the allowable annual inflationary adjustments. As noted in the City's ordinance, general industry recommendations are to adjust these charges annually based on changes in construction costs, and to update the charges every three to five years, or whenever comprehensive planning documents for the systems have been updated.

The first step in establishing cost-based SDCs, is to gain a better understanding of the definition of a SDC. For the purposes of this report, a SDC is defined as follows:

> *"System development charges are one-time charges paid by new development to finance construction of public facilities needed to serve them."*[1]

SDCs for storm drain are generally imposed as a condition of service. The objective of the SDCs are not to generate revenues for a utility, but rather to create fiscal balance between existing customers and new customers so that all customers seeking to connect to the utility's systems bear an proportional share of the cost of capacity that is invested in both the existing, and any future growth-related expansion of the system. Through the implementation of cost-based and equitable SDCs, existing customers will not be unduly burdened with the cost of new development. Absent those charges, many utilities would likely be unwilling to build growth-related facilities (i.e., burden existing rate payers with the entire cost of growth-related capacity expansion). The establishment of a cost-based SDC is a function of generally accepted methodologies, along with Oregon State law and regulations.

[1] Arthur C. Nelson, System Development Charges for Water, Sewer, and Stormwater Facilities, Lewis Publishers, New York, 1995, p. 1,

Requirement Under Oregon State Law

In establishing SDCs, an important requirement is that they be developed and implemented in conformance with local laws. In particular, many states have established specific laws regarding the establishment, calculation, and implementation of SDCs. The main objective of most state laws is to assure that these charges are established in such a manner that they are fair, equitable, and cost-based. In other cases, state legislation may have been needed to provide the legislative powers to the utility to establish the charges.

The purpose of Oregon law for the determination of SDCs is to provide a uniform framework for the imposition of SDCs by local governments for specified purposes, and to establish that such fees be used only for capital improvements. Specifically, the requirement for the calculation of SDCs in Oregon is found in ORS 223.297 to 223.314. Capital improvements as defined under Oregon law are as follows:

- Water supply, treatment and distribution;
- Wastewater collection, transmission, treatment and disposal;
- Drainage and flood control;
- Transportation; and
- Parks and recreation.

An SDC means a reimbursement fee, an improvement fee, or a combination thereof. As defined under Oregon law, "improvement fee" means a fee for the costs associated with capital improvements to be constructed. "Reimbursement fee" means a fee for costs association with capital improvements already constructed or under construction.

In addition to the definitive requirements of the establishment of a SDC as an improvement fee and/or reimbursement fee, other requirements under Oregon law are as follows:

- The SDC must be based on an approved capital improvement plan, public facilities plan, master plan, or comparable plan which lists the capital improvements that may be funded with the improvement fee revenues and the estimated costs and timing for each improvement.
- Proper administrative review procedures must be followed in the enactment of an SDC resolution or ordinance.
- SDC funds must be spent only on facilities for which they were collected.
- A proper accounting system must be established which provides for an annual accounting of SDCs showing the total amount of revenue collected and the projects that were funded.
- The SDC may be annually adjusted based on an annual, recognized, published index if incorporated as part of methodology and in a separate ordinance.

System Development Charge Calculation

In simple terms storm drain planning is based on stormwater runoff after an immediate rainfall and can involve groundwater flow and snow melt. The purpose of a storm drain system is to control runoff in ways that minimize hazards to life and property, and minimize inconvenience to

the general public. Many outside factors contribute to the runoff such as development, vegetation or hard surface area which do not allow for a set and defined capacity like a water or sewer system. For the most part the stormwater infrastructure is based on planning and development for a stormwater event, usually measured in 20 to 25 year increments. The City measures their storm drain capacity based on the Urban Growth Boundary (UGB) planning for existing and future buildable units.

There are various approaches that can be used to establish SDCs which ultimately depend on the available capacity in the utility (i.e., ability to meet future customer demands). The Water Environment Federation (WEF) Manual of Practice No. 27, Financing and Charges for Wastewater Systems, Fourth Edition discusses three generally accepted SDC methods:

- The ***buy-in method*** is based on the value of the existing system's capacity. This method is typically used when the existing system has sufficient capacity to serve new development now and into the future.

- The ***incremental cost method*** is based on the value or cost to needed to add to the existing system to serve additional customers. This method is typically used when the existing system has limited or no capacity to serve new development now and into the future.

- The ***combined approach*** is based on a blended value of both the existing and future costs needed to serve a new customers. This method is typically used where some capacity is available in the existing system, but future projects are needed in other parts (e.g., lift station, collection) to serve new development at some point in the future.

The storm drain system has specific expansion needs to serve new customers. Therefore, the combined approach is the approach that best fits the City's expansion of facilities given the impacts of growth outlined in the Master Plan. Therefore, the existing and future component cost per ESU is determined, and the cost per ESU for each existing and future component is added together for a combined total.

Within the generally accepted SDC methodologies,[2] there are a number of different steps used to establish cost-based and equitable SDCs. These steps are as follows:

- **Step 1** – Determination of system planning criteria
- **Step 2** – Determination of equivalent service units (ESUs)
- **Step 3** – Valuation of system component costs
- **Step 4** – Determination of any credits

[2] Methodologies established in industry documents referenced as System Development Charges for Water, Wastewater, and Stormwater Facilities, by Arthur C. Nelson; AWWA M-1 Manual, 7th Edition and WEF Manual of Practice No. 27, Financing and Charges for Wastewater Systems, Fourth Edition.

Step 1 – Determination of System Planning Criteria

The first step in establishing the SDC is the determination of the system planning criteria. This implies calculating the amount of capacity required by a single-family residential customer, or one ESU. The use of an adopted facility plan or master plan for the utility provides the basis for the SDC system planning criteria. These planning documents provide the rational planning basis and criteria for the facilities and investment needed to operate and maintain the system properly and adequately. Generally, for a storm drain system the planning criterion is the defined minimum lot size per ESU. The City's recent Urban Growth Boundary, Buildable Lands Inventory defined the average lot as roughly 94% high density residential zoning with a minimum lot size of 5,000 square feet. Table 1, below, provides the planning data for the City's storm drain system.

Table 1. SDC – Planning Data

Description	Total
Total Buildable Acres(1)	96.05
Square Feet per Acre(2)	x 43,560
Total Buildable Square Feet	= 4,183,938
Minimum Lot Size(3)	÷ 5,000
Total Future ESUs	**= 836.79**

(1) Manzanita UGB: Buildable Lands Inventory, October 10, 2019, Table 9: Summary of Residential Buildable Lands.

(2) Definition of square feet per Acre is 43,560 square feet.

(3) Defined minimum lot size, Manzanita UGB: Buildable Lands Inventory, October 10, 2019, page 21 of 21.

Step 2 – Determination of Equivalent Service Unit (ESU)

The next step is the determination of the ESUs. An ESU provides a "common denominator" for assessing impact on a utility system. The determination of the total system ESUs is an important calculation in that it provides the linkage between the amounts of infrastructure necessary to provide service to a set number of customers.

System planning criteria are used to establish the capacity needs of an ESU. The future ESUs is 836.79 units. The existing ESUs is 3,039.00 based on billing data from the 2021 Water Master Plan. The future ESUs plus the existing ESUs is approximately 3,875.79 total ESUs. A summary of the existing, future and total ESUs is presented in Table 2.

Table 2. SDC – Equivalent Service Units

Description	Total
Existing ESUs(1)	3,039.00
Future ESUs(2)	836.79
Total ESUs	3,875.79

(1) Number of ESUs based on billing data from 2021 Water Master Plan for 2020, page iii..

(2) Future ESUs based on Table 1 SDC-Planning Data.

Given the development of the storm drain system ESUs the focus shifts to the calculation of the SDC for each component. This aspect of the analysis is discussed in the next steps below.

Step 3 – Valuation of System Component Costs

The next step of the analysis is to review the major functional system infrastructure to determine the SDC for the storm drain system. In calculating the SDC, existing components and future capital improvements relating to expansion were included. The methodology used to calculate each of these components is described below.

Existing or Buy-in Component

The City currently uses the cash basis methodology for reporting which does not require reporting of assets or depreciation. Therefore, to update the current storm drain system development charges absent asset data, the City provided the last several years of completed storm drain projects. A replacement cost method was used to bring the infrastructure to today's dollars. To accomplish this, the completed projects were escalated to October 2022 dollars, based on the Construction Cost Index (CCI) for the Seattle area published in the Engineering News-Record (ENR). The total SDC existing component value totaled $446,000. The total existing completed projects of $446,036 divided by total ESUs of 3,875.79 results in $115 per ESU for the existing component ($446,036 ÷ 3,875.79 ESUs = $115 per ESU). Further detail can be seen on Exhibit 2 of the Technical Appendix.

Future Component

An important requirement for a SDC is the connection between the anticipated future growth on the system and the required facilities and infrastructure needed to accommodate that growth. For purposes of this study, the City's current Capital Improvement Plan (CIP) was provided by the City. It should be noted that the future components are in today's dollars (2022).

The total future capital projects totaled $6.1 million. The total future component of $6.1 million divided by total ESUs of 3,875.79 results in $1,584 per ESU for the future component ($6.1 million ÷ 3,875.79 ESUs = $1,584 per ESU). The capital improvement listing can be seen on Exhibit 3 of the Technical Appendix.

Step 4 – Determination of Any Credits

The last step in the calculation of the SDC the determination of any credits. The credit considers the method used to finance infrastructure on the system so that customers are not paying twice for infrastructure. The double payment can come in through the imposition of a SDC and then the requirement to pay debt service within a customer's storm drain rates.

The City does not have any outstanding debt service for storm drain therefor there is no debt credit at this time.

SDC Summary of Net Allowable Calculation

Based on the sum of the component costs calculated above, the allowable storm drain SDC was determined. "Allowable" refers to the concept that the calculated SDC is the City's cost-based

SDC. The City, as a matter of policy, may charge any amount up to the allowable SDC, but not over that amount. Charging an amount greater than the allowable SDC would not meet the practical basis of a cost-based SDC. Table 3 shows a summary of the allowable SDC per ESU. Details are provided in Exhibit 1 of the Technical Appendix.

Table 3. Summary of SDC per ESU

Component	Total SDC
Reimbursement Fee (RCN)	$446,036
Improvement Fee	6,140,000
Total Reimbursement and Improvement Fee	**$6,586,036**
Total Existing and Future ESUs	3,875.79
Total System Development Charge per ESU(1)	**$1,699**

(1) One ESU equals 5,000 square foot lot size.

This calculated storm drain SDC of $1,699 compares to the City's current SDC of $174 per ESU, or an increase of $1,525. The $1,699 per ESU reflects one (1) equivalent service unit which is approximately a 5,000 square foot lot based on the UGB Buildable Land Inventory definitions.

The large increase is based on the fee not changing since 1996, plus capital projects that need to be completed for additional growth on the system. It is recommended that the City adjust the adopted fee by the City Council, annually, as detailed in the Ordinance 91-4. Further, if planning data or capital projects change the fee should be updated with any new planning information.

SDC Implementation

The City implements the fee on an ESU basis. Table 4 below summarizes the SDC for present and calculated for the storm drain system.

Table 4. Present and Calculated System Development Charge

Use Category	Present SDC(1)(2)	Calculated SDC(3)	$ Change
One (1) Equivalent Service Unit	$174	**$1,699**	$1,525

(1) 1 equivalent service unit is approximately 5,000 square foot lot.

(2) Present SDC as of 1996.

(3) Combined methodology established in Water Environment Federation (WEF) Manual of Practice No. 27, 4th Edition, p. 206-211.

Summary

Based on the review and update of the City's storm drain system, HDR recommends the following:

- ✓ The City may adopt storm drain for new connections to the storm drain system that are no greater than the net allowable SDC as set forth in this analysis.
- ✓ The adopted storm drain SDC should be updated annually by a local construction cost index such as the Engineering New Record Construction Cost Index (ENR-CCI) for no more

than five years before a complete update of the charge is undertaken. This best industry practice can keep the charge relatively current with construction pricing practices.

- ✓ The City should update the actual calculation for the SDC at such time when a new capital improvement plan, public facilities plan, comprehensive system plan, or a comparable plan is approved or updated by the City, or every five years or when a major infrastructure project is completed.

The storm drain SDC developed and presented in this technical review are based on the planning and engineering design criteria of the City's storm drain system, the estimated value of the existing completed projects, future capital improvements, and generally accepted rate and fee setting principles. Adoption of the calculated net allowable SDCs will create equitable and cost-based charges for new customers connecting to the City's storm drain system.

Technical Appendix

City of Manzanita
Exhibit 1
Development of the Storm Drain SDC Per ESU

Description	Original Cost (1)	SDC Eligible Original Cost (2)	TOTAL RCN (3)
Reimbursement Fee			
Land	$0	$0	$0
Storm Drainage	334,537	334,537	446,036
Flood Control	0	0	0
Total Reimbursement Fee	**$334,537**	**$334,537**	**$446,036**
Improvement Fee (4)			
Land		$0	$0
Storm Drainage		6,140,000	6,140,000
Flood Control		0	0
Total Improvement Fee		**$6,140,000**	**$6,140,000**
Total Reimbursement and Future Investment			**$6,586,036**
Total Equivalent Service Units (5)			3,875.79
Calculated SDC per ESU			**$1,699**
Current SDC			**$174**
Seattle ENR-CCI 12/1/1996			6,086.77
Seattle ENR-CCI 10/1/2022			15,197.93
ENR Factor from 1996 - 2022			2.50
Current SDC at ENR			**$434**

NOTES:

(1) Asset list based on infrastructure as of June 30, 2022. See Exhibit 2.
(2) Net of assets that are not SDC eligible.
(3) Replacement based on specific "in service" date of asset and October 2022 Engineering News Record, Seattle construction cost index.
(4) Current capital improvement plan. See Exhibit 3.
(5) Total equivalent service units based on UGB Buildable Lands Inventory. See Exhibit 4.

City of Manzanita
Exhibit 2
Fixed Asset Listing as of June 30, 2022

Asset #	Function	Contributed	Description	Date Acquired	Original Cost	ENR-CCI 9/1/2022 14,639 ENR Factor (1)	Replacement Cost	% SDC	SDC Eligible Original Cost	SDC Eligible Replacement Cost
	Storm Drainage		Third St S. Project (street reconstruction, new storm)	12/30/2013	46,976	1.49	70,034	100.0%	46,976	70,034
	Storm Drainage		Laneda Project (street reconstruction, new storm)	12/30/2014	10,862	1.55	16,801	100.0%	10,862	16,801
	Storm Drainage		Ridge Rd storm (new storm)	12/30/2017	21,784	1.35	29,516	100.0%	21,784	29,516
	Storm Drainage		Ridge Ct (new storm)	12/30/2016	2,075	1.38	2,872	100.0%	2,075	2,872
	Storm Drainage		4th Place S. (new storm)	12/30/2016	6,760	1.38	9,355	100.0%	6,760	9,355
	Storm Drainage		S.Carmel (street reconstruction, new storm)	12/30/2017	137,896	1.35	186,846	100.0%	137,896	186,846
	Storm Drainage		Beach St (new storm)	12/30/2017	2,560	1.35	3,468	100.0%	2,560	3,468
	Storm Drainage		3rd St N. (street reconstruction, new storm)	12/30/2019	94,609	1.22	114,954	100.0%	94,609	114,954
	Storm Drainage		Storm Water Master Plan	12/30/2021	11,014	1.11	12,189	100.0%	11,014	12,189
	Total				**$334,537**		**$446,036**		**$334,537**	**$446,036**

FUNCTION	Original Cost	Replacement Cost	SDC Eligible Original Cost	SDC Eligible Replacement Cost
Assets				
Land	$0	$0	$0	$0
Storm Drainage	334,537	446,036	334,537	446,036
Flood Control	0	0	0	0
Total	**$334,537**	**$446,036**	**$334,537**	**$446,036**

NOTES:
(1) System cost based on asset listing as of June 2022 plus October 2022 ENR-CCI for Seattle.

City of Manzanita
Exhibit 3
Development of Future Capital Improvements

	Project Description (1)	Est. Project Length	Function	Total	% Eligible (2)	$ Eligible
1	Division St. South to Dorcas Ln Drainage	2,800	Storm Drainage	$1,258,000	100%	$1,258,000
2	Sitka St Drainage	550	Storm Drainage	219,000	100%	219,000
3	Lakeview Dr Drainage	2,500	Storm Drainage	1,121,000	100%	1,121,000
4	Pine Ave and Cedar St Drainage	1,130	Storm Drainage	611,000	100%	611,000
5	Hallie Lane Drainage	375	Storm Drainage	254,000	100%	254,000
6	Division St (North) Drainage	650	Storm Drainage	334,000	100%	334,000
7	North Ave and Epoh Ave	100	Storm Drainage	100,000	100%	100,000
8	Greenridge St Drainage	1,775	Storm Drainage	837,000	100%	837,000
9	Cherry St Drainage	500	Storm Drainage	502,000	100%	502,000
10	Manzanita Ave Drainage	2,000	Storm Drainage	904,000	100%	904,000
				---		---
	TOTAL CAPITAL IMPROVEMENT PROGRAM			**$6,140,000**		**$6,140,000**

CATEGORY	TOTAL
Land	$0
Storm Drainage	6,140,000
Flood Control	0
TOTAL	**$6,140,000**

NOTES:
(1) CIP based on Manzanita Stormwater Master Plan Update, December 2020, Figure 8.1, page 64 and 2022 $.
(2) CIP % eligible based on type of project and City engineer input.

City of Manzanita - Storm Drain
Exhibit 4
Development of Equivalent Service Units

		Total	
Total Buildable Acres (1)		96.05	Acres
Square Feet per Acre (2)	X	43,560.00	Square Feet per Acre
Total Buildable Square Feet	=	4,183,938.00	Total Buildable Square Feet
Minimum Lot Size of 5,000 Square Feet (3)	÷	5,000.00	Minimum Lot Size of 5,000 Square Feet
Future Buildable Units	**=**	**836.79**	**Units**
Existing ESUs 2022 (4)		3,039.00	
Future ESUs		836.79	
Total ESUs		**3,875.79**	**ESUs**

NOTES:

(1) Manzanita UGB: Buildable Lands Inventory, October 10, 2019, Table 9: Summary of Residential Buildable Lands.

(2) Definition of square feet per Acre is 43,560 square feet.

(3) Defined minimum lot size, Manzanita UGB: Buildable Lands Inventory, October 10, 2019, page 21 of 21.

(4) Numberof ESUs based on billing data from 2021 Water Master Plan for 2020, page iii.

City of Manzanita
Exhibit 5
Current and Calculated Storm Drain SDC

Item	Calculated SDC
Reimbursement Fee	$115
Improvement Fee	1,584
Total SDC per ESU	$1,699

Current SDC **$174**