RESOLUTION NO. 7139

A RESOLUTION ADOPTING A METHODOLOGY FOR THE DEVELOPMENT OF SYSTEM DEVELOPMENT CHARGES FOR THE WASTEWATER SYSTEM AND REPEALING RESOLUTION NO. 6766 (A RESOLUTION ADOPTING A METHODOLOGY FOR THE DEVELOPMENT OF SYSTEM DEVELOPMENT CHARGES FOR THE WASTEWATER SYSTEM).

WHEREAS, through the previous adoption of ordinances establishing and amending Albany Municipal Code 15.16 regarding system development charges, the Council of the City of Albany has declared its intent to comply with the provisions of Oregon Revised Statutes (ORS) 223.297 through 223.314; and

WHEREAS, the methodology for calculation of system development charges for the wastewater system is specifically described in the attached *Methodology Report – Wastewater System Development Charges*; and

WHEREAS, the methodology for calculating residential system development charges are updated to reflect a scaled system; and

WHEREAS, the scaled system is based on the measured impact of residential development on the city of Albany wastewater system; and

WHEREAS, the methodology for calculating commercial and industrial system development charges has not changed; and

WHEREAS, the proposed methodology establishes a combined reimbursement and improvement fee and defines a maximum allowable system development charge; and

WHEREAS, a notification of a new methodology was sent to interested parties 90 days prior to the September 28, 2022, adoption hearing, with the methodology available for review 60 days prior as required in ORS 223.304(7)(a).

NOW, THEREFORE, BE IT RESOLVED by the Albany City Council that Resolution No. 6766 is hereby repealed as of the effective date of this resolution; and

BE IT FURTHER RESOLVED that the attached Wastewater System Development Charge methodology is hereby adopted as of the effectilve date of this resolution; and

BE IT FURTHER RESOLVED that the Wastewater System Development Charge methodology established by this resolution and the repeal of Resolution No. 6766 shall be effective January 1, 2023.

DATED THIS 28TH DAY OF SEPTEMBER 2022.

Mayor

ATTEST:

Allison R. Liesse

City Clerk

SEAL OF THE CITY OF ALBANY OREGON

Methodology Report

Wastewater System Development Charges

Prepared For

City of Albany

November 5, 2018

With September 2022 Revisions

GALARDI ROTHSTEIN GROUP

SECTION 1

Introduction

Oregon legislation establishes guidelines for the calculation of system development charges (SDCs). Within these guidelines, local governments have some latitude in selecting technical approaches and establishing policies related to the development and administration of SDCs. A discussion of this legislation follows, along with the recommended methodology for calculating wastewater SDCs for the City of Albany (the City), in accordance with state law and industry standard practices.

In Albany, the authority to impose system development charges is contained generally in Chapter 15.16 of the Albany Municipal Code (AMC) and more specifically for the wastewater system in Chapter 10.01.080 of the AMC.

SDC Legislation in Oregon

In the 1989 Oregon state legislative session, a bill was passed that created a uniform framework for the imposition of SDCs statewide. This legislation (Oregon Revised Statute [ORS] 223.297-223.316), which became effective on July 1, 1991, (with subsequent amendments), authorizes local governments to assess SDCs for the following types of capital improvements:

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

The legislation provides guidelines on the calculation and modification of SDCs, accounting requirements to track SDC revenues and expenditures, and the adoption of administrative review procedures.

SDC Structure

SDCs can be developed around two concepts: (1) a reimbursement fee, and (2) an improvement fee, or a combination of the two. The reimbursement fee is based on the costs of capital improvements *already constructed or under construction*. The legislation requires the reimbursement fee to be established or modified by an ordinance or resolution setting forth the methodology used to calculate the charge. This methodology must consider the cost of existing facilities, prior contributions by existing users, gifts or grants from federal or state government or private persons, the value of unused capacity available for future system users, rate-making principles employed to finance the capital improvements, and other relevant factors. The objective of the methodology must be that future system users contribute no more than an equitable share of the capital costs of *existing* facilities. Use of

reimbursement fee revenues are restricted only to capital expenditures for the specific system which they are assessed, including debt service.

The methodology for establishing or modifying an improvement fee must be specified in an ordinance or resolution that demonstrates consideration of the *projected costs of capital improvements identified in an adopted plan and list*, that are needed to increase capacity in the system to meet the demands of new or expanded development, including increased industrial loading. Use of revenues generated through improvement fees are dedicated to capacity-increasing capital improvements or the repayment of debt on such improvements. An increase in capacity is established if an improvement increases the level of service provided by existing facilities or provides new facilities.

In many systems, growth needs will be met through a combination of existing available capacity and future capacity-enhancing improvements. Therefore, the law provides for a **combined fee** (reimbursement plus improvement component).

Credits

The legislation requires that a credit be provided against the improvement fee for the construction of "qualified public improvements" by a developer or other private party. Qualified public improvements are improvements that are required as a condition of development approval, identified in the system's capital improvement program, and either (1) not located on or contiguous to the property being developed, or (2) located in whole or in part, on or contiguous to, property that is the subject of development approval and required to be built larger or with greater capacity than is necessary for the particular development project to which the improvement fee is related.

Update and Review

The methodology for establishing or modifying improvement or reimbursement fees shall be available for public inspection. The local government must maintain a list of persons who have made a written request for notification prior to the adoption or amendment of such fees. The legislation includes provisions regarding notification of hearings and filing for reviews. "Periodic application of an adopted specific cost index or... modification to any of the factors related to the rate that are incorporated in the established methodology" are not considered "modifications" to the SDC methodology. As such, the local government is not required to adhere to the notification provisions under these circumstances. The criteria for making adjustments to the SDC rate, which do not constitute a change in the methodology, are further defined as follows:

- "Factors related to the rate" are limited to changes to costs in materials, labor, or real property as applied to projects in the required project list.
- The cost index must consider average change in costs in materials, labor, or real property and must be an index published for purposes other than SDC rate setting.

The notification requirements for changes to the fees that *do* represent a modification to the methodology are 90-day written notice prior to first public hearing, with the SDC methodology available for review 60 days prior to public hearing.

Other Provisions

Other provisions of the legislation require:

- Preparation of a capital improvement program or comparable plan (prior to the establishment of a SDC), that includes a list of the improvements that the jurisdiction intends to fund in whole or in part with SDC revenues and the estimated timing, cost, and eligible portion of each improvement.
- Deposit of SDC revenues into dedicated accounts and annual accounting of revenues and expenditures, including a list of the amount spent on each project funded, in whole or in part, by SDC revenues.
- Creation of an administrative appeals procedure, in accordance with the legislation, whereby a citizen or other interested party may challenge an expenditure of SDC revenues.

The methodology presented in the following section has been prepared in accordance with Oregon SDC requirements.

SECTION 2

Wastewater SDC Methodology

Overview

The general methodology used to calculate wastewater SDCs begins with an analysis of system planning and design criteria to determine growth's capacity needs, and how those needs will be met through existing system available capacity and capacity expansion. Then, the capacity to serve growth is valued to determine the "cost basis" for the SDCs, which is then divided by the total growth capacity units to determine the system-wide unit costs of capacity. The final step is to determine the SDC fee schedule, which identifies how different users of the system will be charged, based on their estimated capacity requirements. The methodology assumes that all customers connecting to, or intensifying their use of the City's sanitary sewer system will be charged the SDC.

Determine Capacity Needs

Table 1 summarizes the existing conditions and expected future conditions for the wastewater system from various planning documents. The primary relevant design criteria for the system include the following:

- **Average dry weather flow (ADWF):** the average flow at the Water Reclamation Facility (WRF) during the dry weather season, usually defined as May through October. ADWF is used to evaluate capacity for future temperature mitigation projects.
- **Peak Wet Weather Flow (PWWF):** the peak flow modeled for the collection system, which includes base wastewater flow (BWF), groundwater infiltration, and rainfall derived infiltration and inflow. PWWF is used to evaluate capacity needs for the collection system, as well as certain components of the treatment facilities (influent pump station, secondary clarifiers, disinfection and outfall).
- **Maximum month dry weather flow (MMDWF):** the maximum month flow at the WRF during the dry weather season, usually defined as May through October. MMDWF is used to evaluate capacity for tertiary filters in the wastewater treatment process.
- **Maximum month Biochemical Oxygen Demand (MMBOD):** The quantity of oxygen used in the biochemical oxidation of organic matter in a specified time and at a specified temperature. BOD is a measurement of wastewater strength and is used to evaluate capacity for secondary treatment (aeration basins or vertical loop reactors (VLRs).
- **Maximum month Total Suspended Solids (MMTSS):** Solids in the wastewater that are removable by laboratory filtering and approximate the quantity of solids that are

available to be removed from the wastewater through sedimentation. TSS is a measurement of wastewater strength and is used to evaluate capacity for sludge management and dewatering facilities.

Table 1
City of Albany Sewer System SDC Analysis
City of Albany Wastewater System Planning Assumptions

Capacity Parameter	Existing[1] Conditions	Buildout[2] Design	Growth (Buildout minus Existing)
Flow (mgd)			
Average Dry Weather Flow	5.4	18.0	12.6
Max Month Dry Weather Flow	7.6	23.4	15.8
Peak Wet Weather Flow	54.1	80.1	26.0
Loadings (lbs/day)			
BOD Maximum Month	10,883	22,140	11,257
TSS Maximum Month	11,770	29,790	18,020

[1]West Yost Associates Technical Memorandum (8/3/18) adjusted to exclude Millersburg flows & loads
[2]Source: CH2M Project Definitions Report, TM 2-2 June 2005; adjusted to exclude Millersburg flows & loads

The existing and future (buildout) flows and loadings shown in Table 1 exclude actual and projected discharges by the City of Millerburg (Millersburg). Albany has provided sewer service to Millersburg through an intergovernmental agreement since 1979. Millersburg's wastewater is transported to the Albany WRF for processing and discharge through Albany's wastewater discharge permit. While buildout design flows and loadings for the Albany WRF include the anticipated flow and loading from Millersburg, Millersburg has reimbursed Albany for its share of plant capacity. Since this SDC methodology has been developed for Albany specifically, both costs and capacities presented in this report are adjusted to exclude Millersburg's contributions.

Table 1 shows Albany flows and loads under existing conditions and projected design flows and loads at buildout. The difference between the buildout capacity requirements and existing conditions is the total projected growth need over the planning period.

Available Capacity

The total capacity needs of growth will be met in part by existing system available capacity, as well as future capacity expansion. **Table 2 (next page)** provides a summary of the existing capacities by major treatment function and for each of the City's lift stations and compares the capacity to existing flows and loads in order to determine the portion of available capacity by component and facility. As with Table 1, the capacities and flows and loads shown in Table 2 have been adjusted to exclude Millersburg's share of WRF capacity. Furthermore, the wetlands facility available capacity has been adjusted to exclude capacity owned by a large industrial customer (ATI). With the exception of the wetlands, most treatment facilities have some amount of available capacity, as do most of the lift stations.

Table 2
City of Albany Sewer System SDC Analysis
Treatment and Lift Station Available Capacity Analysis

	Design Criteria	Albany Capacity[2]	Existing Flow/Load	Available Capacity Quantity	Available Capacity %
WWTP [1]					
Influent Pump Station	PWWF	61	54	7.1	10%
Headworks	PWWF	62	54	8.0	12%
Grit Removal	PWWF	62	54	8.0	12%
Secondary Treatment	MMBOD	10,890	10,883	7.0	0%
Secondary Clarifiers	PWWF	61	54	7.1	10%
Tertiary Filters	MMDWF	-			
Chlorine Contact	PWWF	62	54	8.0	12%
Solids Processing	MMTSS	14,490	11,770	2,720	17%
Wetlands	ADWF	5.4	5.4	-	0%
Outfall	PWWF	61	54	7.1	10%
Lift Stations[3]					
Maple St.	PWWF	4,800	4,500	300	0%
Queen Ave.	PWWF	440	120	320	73%
Umatilla	PWWF	500	850	(350)	0%
Oak Creek	PWWF	7,400	1,100	6,300	85%
College Green	PWWF	400	300	100	25%
34th Ave.	PWWF	4,680	3,100	1,580	34%
Marion St.	PWWF	190	160	30	16%
Oak St.	PWWF	400	60	340	85%
Century Drive	PWWF	1,500	800	700	47%
Charlotte St. (Decommission)	PWWF	500	100	400	80%
North Albany	PWWF	2,600	2,700	(100)	0%
Columbus St.	PWWF	1,000	400	600	60%

[1]Source: West Yost Associates Technical Memorandum (8/3/18)
[2]Albany capacity = 90% of total capacity for all WWTP facilities, except Wetlands which also excludes ATI capacity; lift station capacity based on 100% of existing lift station firm capacity
[3]Source: Wastewater Collection System Facility Plan Table 1, February 2015

The City also utilized hydraulic modeling results to evaluate existing system available capacity in the collection system during high flow conditions. Specifically, the existing capacity and peak wet weather flow (during 5-year design storm) were determined for each modeled pipe segment to determine the available capacity by pipe segment to prevent or reduce the likelihood of sewer system overflows. Then, each segment was weighted based on its proportion of total system pipe length in order to determine the overall system available capacity for the collection system. Based on this analysis, the available collection system capacity was estimated to be 41 percent.

Develop Cost Basis

As discussed in Section 1, the reimbursement fee is intended to recover the costs associated with the available capacity in the existing system; the improvement fee is based on the costs of capacity-increasing future improvements needed to meet the requirements of growth.

The value of capacity needed to serve growth in aggregate within the planning period, is referred to as the "cost basis."

Reimbursement Fee Cost Basis

As discussed in Section 1, the reimbursement fee is based on the costs of capital improvements already constructed or under construction. In developing the cost basis, the methodology must consider the cost of existing facilities, prior contributions by existing users, gifts or grants from federal or state government or private persons, the value of unused capacity available for future system users, and other relevant factors.

Fixed Assets

Table 3 (next page) shows the calculation of the reimbursement fee cost basis for the Albany's wastewater system, based on the fixed assets of the system as of June 30, 2017. Consistent with statutory requirements, the cost basis reflects the costs of the system, as well as contributed costs in the form of grants or contributions from developers or private persons. Interest expense is also added for certain facilities previously financed (wetlands and a portion of the WRF expansion). The City's fixed asset records were used to identify asset values by major facility type. Contract payment information for bid items related to the more recent (2010-2011) WRF expansion was used to breakdown the total costs by major unit process.

In establishing the existing system cost or value for SDC purposes, there are a variety of approaches used in the industry. Based on prior policy, Albany's approach is "Appreciated Book Value" (where appreciated book value is equal to inflated[1] asset cost less accumulated depreciation). This approach recognizes both changes in the value of the dollar since the facilities were constructed, as well as the reduced asset life since construction in the form of deprecation.

The available capacity for each component is generally determined from the analysis summarized in Table 2 and reflects the facility-specific design criteria. In the case of the additional VLR basin built during the WRF expansion, 100 percent of facility costs are included, as this improvement was made entirely for future growth. As shown in Table 3, the reimbursement cost basis related to existing system fixed assets is about $25.3 million.

Work in Progress

As of July 1, 2018, there were a number of projects from the City's Wastewater Collection System Facility Plan (February 2015) that are under construction that will also provide capacity for future growth. **Table 4** (page 11) summarizes the "Work in Progress" for these projects. Entirely new collection system sewers that provide service to growth areas provide 100 percent new capacity for future growth, while replacement of existing sewers generally provides both new capacity for growth, as well as replacement of capacity for existing development. Collection system work in progress totals about $21.7 million, of which about $9.2 million is associated with capacity for future growth.

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[1] Assets are adjusted for inflation based on the year of construction. Inflation is estimated using the change in the Engineering News Record Construction Cost Index between year constructed and December 2017.

Table 3
City of Albany Sewer System SDC Analysis
Reimbursement Fee Cost Basis – Fixed Assets (as of June 30, 2017)

Description	Design Basis	Original Cost	Contributed Grant-Funded	Appreciated Book Value	Contributed Grant-Funded	Net of Contributed Funds	Interest	Available Capacity[1] %	Available Capacity[1] $
Land									
Wetlands	ADWF	$4,639,457	$754,006	$6,139,534		$6,139,534	$967,138	0%	$0
WWTP	General	$781,505		$1,039,258		$1,039,258		14%	$141,874
North Albany	PWWF	$130,285		$253,247		$253,247		0%	$0
McKibben Property	PWWF	$69,319		$78,206		$78,206		10%	$8,127
General	PWWF	$273,737	$21,298	$561,791	$153,657	$408,134		10%	$42,410
Subtotal		$5,894,303		$8,072,036	$153,657	$7,918,379			$192,411
Plant & Buildings									
Pump Station	PWWF	$2,103,465		$0		$0		10%	$0
Headworks	PWWF	$556,000		$0		$0		12%	$0
Secondary	MMBOD	$1,262,519		$0		$0		0%	$0
Secondary Clarifiers	PWWF	$0		$0		$0		10%	$0
Solids Processing	MMTSS	$6,253,079		$6,034,413		$6,034,413		17%	$1,019,478
Outfall	PWWF	$1,004,967		$0		$0		10%	$0
General	General	$2,237,715		$889,822		$889,822		14%	$121,474
General Plant	General	$1,506,171		$650,393	650,393	$0			$0
Subtotal		$14,923,916		$7,574,628	$650,393	$6,924,235			$1,140,952
WRF Expansion									
Pump Station	PWWF	$8,034,330	$803,433	$8,931,554	$893,155	$8,038,398		10%	$835,284
Headworks	PWWF	$20,970,675	$2,097,067	$23,312,548	$2,331,255	$20,981,293		12%	$2,422,275
Secondary	MMBOD	$1,184,342	$118,434	$1,316,602	$131,660	$1,184,942		0%	$686
Secondary Clarifiers	PWWF	$13,498,817	$1,349,882	$15,006,280	$1,500,628	$13,505,652		10%	$1,403,396
Solids Processing	MMTSS	$21,032,472	$2,103,247	$23,381,246	$2,338,125	$21,043,121		17%	$3,555,111
Outfall	PWWF	$7,209,154	$720,915	$8,014,227	$801,423	$7,212,805		10%	$749,495
VLR Basin	MMTSS	$993,384	$99,338	$1,104,319	$110,432	$993,887		100%	$993,887
Subtotal		$72,923,174	$7,292,317	$81,066,775	$8,106,677	$72,960,097		14%	$9,960,134
Wetlands									
Wetlands	ADWF	$10,702,622	$8,312,973	$9,715,826	$7,546,506	$2,169,320		0%	$0
Land Improvements	ADWF	$57,157		$57,157		$57,157		0%	$0
Subtotal		$10,759,779		$9,772,983	$7,546,506	$2,226,477			$0

[1]Available capacity percentages from Table 2 by unit process or lift station; general assets based on overall growth share (14 percent)

Table 3 (Continued)
City of Albany Sewer System SDC Analysis
Reimbursement Fee Cost Basis – Fixed Assets (as of June 30, 2017)

Description	Design Basis	Original Cost	Contributed Grant-Funded	Appreciated Book Value	Contributed Grant-Funded	Net of Contributed Funds	Interest	Available Capacity[1] %	Available Capacity[1] $
Lift Stations									
Maple St.	PWWF	$3,350,136		$1,462,308		$1,462,308		0%	$0
Oak Creek	PWWF	$4,009,562		$3,738,889		$3,738,889		85%	$3,183,108
34th Ave.	PWWF	$2,069,434		$1,761,278		$1,761,278		34%	$594,619
North Albany	PWWF	$4,352,620		$3,704,452		$3,704,452		0%	$0
Columbus St.	PWWF	$412,157	$79,716	$178,488	$34,522	$143,966		60%	$86,380
Lift Station	PWWF	$667,444		$326,007		$326,007		10%	$33,876
Subtotal		$14,861,353		$11,171,422	$34,522	$11,136,900			$3,897,983
Collection									
Sewer Lines	PWWF	$30,825,710		$29,722,911	$7,155,802	$22,567,109		41%	$9,252,515
Interceptors	PWWF	$730,455		$546,917		$546,917		41%	$224,236
Subtotal		$31,556,165		$30,269,828	$7,155,802	$23,114,026			$9,476,751
Total		**$150,918,690**		**$147,927,672**	**$23,647,557**	**$124,280,115**		17%	**$24,668,231**
Plus WRF Capitalized Interest	General	$4,806,081		$4,710,025		$4,710,025		14%	$642,988
Net Value		**$155,724,771**		**$152,637,697**	**$23,647,557**	**$128,990,140**			**$25,311,219**

[1]Available capacity percentages from Table 2 by unit process or lift station; general assets based on overall growth share (14 percent)

Source: City of Albany
Appreciated Book Value based on December 2017 ENR Seattle (11,443)

Table 4
City of Albany Sewer System SDC Analysis
Reimbursement Fee Cost Basis - Work in Progress

Description	Design Basis	Original Cost	Net of Contributed	Available Capacity %	Available Capacity $
Collection					
RFI - Wet Weather Pump Station	PWWF	$5,360,000	$5,360,000	39%	$2,090,400
RFI - Force Main - Wet Weather Pump Station	PWWF	$5,757,000	$5,757,000	39%	$2,245,230
RFI - Rehabilitation	PWWF	$1,398,000	$1,398,000	39%	$545,220
P7 - Waverly Drive to south of RR tracks	PWWF	$1,157,000	$1,157,000	38%	$439,660
P8 - Adjacent to Waverly Lake from Salem Ave. to Swan Lake	PWWF	$1,324,000	$1,324,000	38%	$503,120
P9 - Bain Street from Swan Lake toward Lansing Avenue and east 940 feet	PWWF	$1,918,000	$1,918,000	7%	$134,260
P-10 Swan Lake to Airport Road	PWWF	$3,041,000	$3,041,000	59%	$1,794,190
P11 - Airport Road to Timber Linn Lake	PWWF	$751,000	$751,000	63%	$473,130
P22 - New sewer from east end of Somerset Dr. to east side of Burkhart-Truax overflow channel	PWWF	$607,500	$607,500	100%	$607,500
P23 - New sewer from east side of Burkhart-Truax overflow channel to Charlotte St. lift station	PWWF	$405,000	$405,000	100%	$405,000
Total		**$21,718,500**	**$21,718,500**	42.5%	**$9,237,710**

Source: City of Albany September 2018

Improvement Fee Cost Basis

The cost of future capacity-increasing improvements (the improvement fee cost basis) is presented in Tables 5 and 6. The improvements are based on costs identified in recent system planning documents; specially, the Wastewater Collection System Facility Plan, February 2015, and the West Yost Technical Memorandum, August 2018 (related to wastewater treatment improvements). Costs have been updated to December 2017 using inflation factors from the Engineering News Record (ENR) Construction Cost Index (CCI) for Seattle. Each improvement was reviewed to determine the portion of costs that expand capacity for growth for Albany customers versus remedy an existing deficiency or replace existing capacity. An increase in system capacity may be established if a capital improvement increases the level of performance or service provided by existing facilities or provides new facilities.

Treatment

Table 5 presents the planned capital improvements associated with treatment facilities or future requirements at the WRF. With the exception of the influent pump station expansion and the sludge facility improvements, 100 percent of the planned improvements provide new capacity required to serve future system growth. The improvement fee cost basis is limited to the portion of the planned capacity expansion needed to serve growth in Albany, so facility costs exclude 10 percent associated with Millersburg's share of capacity. The treatment-related improvement costs for growth total almost $167.4 million 94 percent of total).

Collection

Collection system pipelines (10-inch and larger) and lift stations are evaluated individually to determine the portion of project costs associated with capacity expansion for growth versus service to existing customers. All new development projects are needed to extend the system to new growth areas and are 100 percent capacity for growth. Other high and low priority projects include a portion of costs for existing development and future growth, where the future growth share ranges from 3 percent to 86 percent depending on the improvement. As a result of this process, approximately 81 percent of the total cost ($62.5 million) of planned collections system projects are included in the improvement fee cost basis.

Overall, the improvement fee cost basis includes almost $218 million for Albany's portion of the planned improvements through build out of the Urban Growth Boundary (UGB).

Table 5
City of Albany Sewer System SDC Analysis
Improvement Fee Cost Basis – Treatment

Project #	Project Description	Albany's Cost	SDC-Eligible %	SDC-Eligible $	Design Basis	Time Period
T-1	Influent Pump Station Expansion	$15,218,000	93%	$14,153,000	PWWF	15+ Years
T-2	Headworks 4th Channel Equipment & Screening Equipment	$1,882,000	100%	$1,882,000	PWWF	15+ Years
T-3	Headworks Grit Removal Equipment	$2,943,000	100%	$2,943,000	PWWF	15+ Years
T-4	VLR No. 1A	$1,352,000	100%	$1,352,000	MMBOD	5 Years
T-5	VLR No. 2A	$3,273,000	100%	$3,273,000	MMBOD	5-15 Years
T-6	Vertical Loop Reactors 9-14	$23,607,000	100%	$23,607,000	MMBOD	15+ Years
T-7	Blower Building #2	$5,897,000	100%	$5,897,000	MMBOD	15+ Years
T-8	Secondary Clarifier #4	$5,283,000	100%	$5,283,000	PWWF	15+ Years
T-9	Tertiary Filters	$47,151,000	100%	$47,151,000	MMDWF	15+ Years
T-10	Chorine Contact Basin Expansion	$2,786,000	100%	$2,786,000	PWWF	15+ Years
T-11	Sludge Composting and Dewatering Facilities	$25,560,000	62%	$15,847,000	MMTSS	5 Years
T-12	Future Temperature Mitigation Projects	$38,321,000	100%	$38,321,000	ADWF	TBD
T-13	Outfall and Diffuser No. 2	$4,856,000	100%	$4,856,000	PWWF	15+ Years
	Total	**$178,129,000**	**94%**	**$167,351,000**		

Source: City of Albany
Costs reflect December 2017 ENR Seattle (11,443)

Table 6
City of Albany Sewer System SDC Analysis
Improvement Fee Cost Basis - Collection

Time (Years)[1]	Project Description	Albany's Cost	SDC-Eligible %	SDC-Eligible $	Design Basis
5-15	Cox Creek Interceptor	$4,796,000	65%	$3,107,000	PWWF
5	Ferry Street and 28th Avenue	$5,040,000	3%	$151,000	PWWF
5-15	Columbus Street Projects	$582,000	75%	$437,000	PWWF
5-15	Century Drive - Draperville Projects	$14,049,000	86%	$12,099,000	PWWF
5-15	North Albany Lift Station Project	$2,815,000	63%	$1,773,000	PWWF
5-15	Hill Street Project	$2,026,000	18%	$365,000	PWWF
5-15	Marion Street Projects	$1,369,000	64%	$875,000	PWWF
15+	Columbus Street Extension Project	$1,936,000	100%	$1,936,000	PWWF
15+	Marion Street Extension Project	$1,355,000	100%	$1,355,000	PWWF
15+	Three Lakes Road Projects	$6,118,000	100%	$6,118,000	PWWF
15+	Highway 20 Projects	$4,294,000	100%	$4,294,000	PWWF
15+	Timber Linn Projects	$3,671,000	100%	$3,671,000	PWWF
15+	Knox Butte Road Projects	$4,808,000	100%	$4,808,000	PWWF
15+	Burkhart Creek Lift Station	$957,000	100%	$957,000	PWWF
15+	Springhill Drive Projects	$4,696,000	100%	$4,696,000	PWWF
15+	Quarry Road Lift Station	$957,000	100%	$957,000	PWWF
15+	West Thornton Lake Projects	$3,031,000	100%	$3,031,000	PWWF
	Total	**$62,500,000**	**81%**	**$50,630,000**	

Source: City of Albany
[1]Definitions: The time period for most projects is primarily development driven and are subject to change. Costs reflect December 2017 ENR Seattle (11,443)

Develop SDC Schedule

System-wide unit costs of capacity are determined by dividing the reimbursement fee and improvement fee cost bases by the aggregate growth-related capacity requirements from Table 1. The unit costs are then applied to the capacity requirements of a typical dwelling unit to determine the maximum allowable fee per equivalent dwelling unit (EDU). Furthermore, the base (residential) EDU rate is scaled up for higher strength commercial customers and is based on actual flows and loadings from industrial customers based on their estimated wastewater flows and strengths.

EDU Capacity Requirements

Table 7 (next page) presents the calculation of the capacity requirements by design criteria per residential EDU based on information from the Wastewater System Facilities Plan (CH2M-Hill, June 1998), as well as other customer billing data, 2010 Census information, and recent plant flow and load data. Estimating capacity requirements begins with the average base residential flow per person, which is estimated to be 75 gallons per day (gpd). The base flow per EDU is estimated based on the residential flow per person (from the Facilities Plan) multiplied by an average of 2.51 persons per household (from 2010 Census data). Average dry weather (ADW) infiltration and inflow (I/I) is added to base flow per EDU to determine the ADWF per EDU of 347 gpd.

Table 7
City of Albany Sewer System SDC Analysis
Estimated EDU Capacity Requirements

Line #	Component	Value	Source
	Flow assumptions (gpd)		
1	Base flow per person	75	Wastewater Facility Plan
2	Base flow per EDU	188	Line 1 X Line 11
3	Future ADW I/I per EDU	159	3-year average
4	ADWF per EDU	347	Line 2 + Line 3
5	PWWF per new EDU	716	Growth in PWWF / Line 10
6	MMDWF per new EDU	436	Growth in MMDWF / Line 10
	Loading assumptions (lbs/day)		
7	MMBOD per EDU	0.383496	Existing MMBOD / Line 9
8	MMTSS per EDU	0.414752	Existing MMTSS / Line 9
	EDU Assumptions		
9	Current EDUs	28,378	(1)
10	Future Additional EDUs	36,254	(2)
11	Persons per household	2.51	2010 Census Data

(1) Estimated based on current population, persons per household and customer billing data
(2) Estimated based on future ADWF and line 4

To estimate EDU requirements for each system design parameter, the projected future design flows are divided by projected future EDUs, where future EDUs are estimated by dividing projected future ADWF (from Table 1) by the ADWF per EDU (347 gpd). Loading assumptions (MMBOD and MMTSS) per EDU are based on recent loading data at the WRF and estimated current EDUs from population and billing data. Table 7 shows these results.

Residential Dwelling Requirements

Base flow estimates per dwelling unit were developed from three years of average winter month (November through February) water use records obtained from the city's billing system. Winter average water use is a reasonable estimate of customer wastewater flows, as outdoor water uses (that do not return to sewer system) are generally minimal during this time. Table 8 provides the resulting EDU factors that represent the winter average flows for Duplex/Triplex/Fourplex and Apartment dwelling units, relative to that of an average Single-Family dwelling.

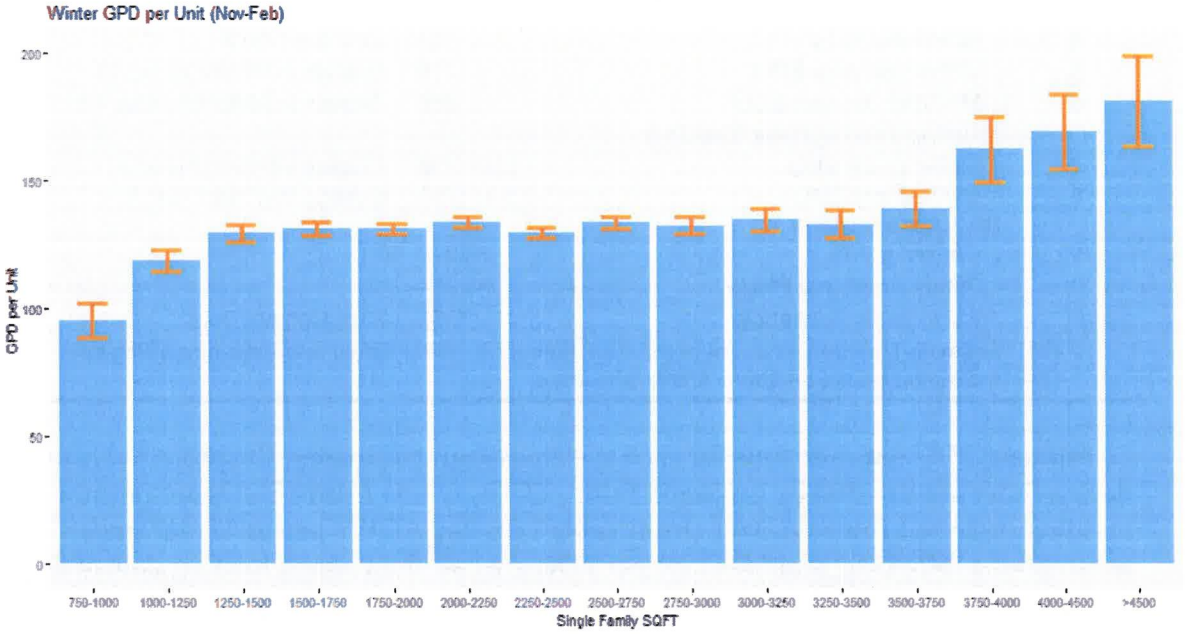
Table 8
Residential Dwelling Unit EDU Factors

Dwelling Type	Tier Description (SQ FT)	EDU Factor[1]
Single Family (Average)		1.00
Single Family Tiers		
1	<=1000	0.73
2	1000-1250	0.89
3	1250-3000	1.00
4	>3000	1.09
Duplex/Triplex/Fourplex	na	0.90
Apartment (>4 units)	na	0.68

1) Based on winter (November – February) average water use per dwelling unit, relative to an average single-family dwelling.

EDU factors were also developed for different sizes of single-family dwellings, based on information in the City's Geographical Information System (GIS). Figure 1 shows the distribution of average winter water use (in gallons per day per unit) by house size.

Figure 1 Residential Winter Average Water Use by Size of Dwelling



The relatively uniform water use for dwellings between 1,250 SQ FT and 3,000 SQ FT, and the significantly lower and higher average use for dwellings on the lower and upper ends of the distribution is most supported of a tiered SDC structure. The 4-tiered structure shown in Table 8 reflects both the technical analysis illustrated in Figure 1, and administrative considerations (i.e., consistency with the transportation SDC methodology).

~~Based on prior policy, the same capacity requirements per EDU are applied to single family residential and multifamily residential dwelling units, and~~

Nonresidential Requirements

Commercial development is classified into 3 strength categories: low, medium, and high. The capacity requirements per EDU **shown in Table 7** are ~~the same for~~ **applied to both** low strength commercial and residential dwelling units. However, the loading assumptions per EDU for medium and high strength commercial customers are higher and reflect the same assumptions as past wastewater SDC studies:

Medium strength: MMBOD = 0.909 lbs/day; MMTSS = 0.698 lbs/day

High strength: MMBOD = 2.063 lbs/day; MMTSS = 1.237 lbs/day

Unit Costs and Maximum Allowable SDC per EDU

Tables ~~8~~ 9 and ~~9~~ 10 (next page) show the reimbursement and improvement fee calculations **per EDU for the different strength classes**.

Table ~~8~~ 9
City of Albany Sewer System SDC Analysis
Reimbursement Fee (SDCr) Calculation

	System Component					
	ADWF	MMDWF	PWWF	MMBOD	MMTSS	**Total**
Reimbursement Cost Basis	mgd	mgd	mgd	Lbs/day	lbs/day	
Assets	$0	$0	$19,535,232	$711	$5,775,276	$25,311,219
Work in Progress	$0		$9,237,710	$0	$0	$9,237,710
Total	$0	$0	$28,772,942	$711	$5,775,276	$34,548,929
Growth Capacity	12.6	15.8	26.0	11,257	18,020	
Unit Cost ($/unit)	$0	$0	$1,108,101	$0	$320	
Capacity per EDU	0.000347	0.000436	0.000716	0.383496	0.414752	
SDCr per EDU – Residential/Low	**$0**	**$0**	**$794**	**$0**	**$133**	**$926**
SDCr per EDU – Medium	*0.000347*	*0.000436*	*0.000716*	*0.909*	*0.698*	**$1,017**
SDCr per EDU – High	*0.000347*	*0.000436*	*0.000716*	*2.063*	*1.237*	**$1,190**

Table ~~9~~ 10
City of Albany Sewer System SDC Analysis
Improvement Fee (SDCi) Calculation

	System Component					
	ADWF	MMDWF	PWWF	MMBOD	MMTSS	**Total**
	mgd	mgd	mgd	lbs/day	lbs/day	
Improvement Fee Cost Basis	$38,321,000	$47,151,000	$82,533,000	$34,129,000	$15,847,000	$217,981,000
Growth capacity	12.6	15.8	26.0	11,257	18,020	
Unit Cost ($/Unit)	$3,043,765	$2,980,234	$3,178,503	$3,032	$879	
Capacity per EDU	0.000347	0.000436	0.000716	0.383496	0.414752	
SDCi per EDU – Residential/Low	**$1,057**	**$1,301**	**$2,277**	**$1,163**	**$365**	**$6,162**
SDCi per EDU – Medium	*0.000347*	*0.000436*	*0.000716*	*0.909*	*0.698*	**$8,004**
SDCi per EDU – High	*0.000347*	*0.000436*	*0.000716*	*2.063*	*1.237*	**$11,977**

The reimbursement fee cost basis of approximately $34.6 million is allocated across design parameter and then divided by the estimated future growth by parameter to determine the unit costs of capacity. Then, the EDU capacity requirements (from Table 7) are multiplied by the unit costs to determine the reimbursement fee SDC (SDCr) per EDU. For residential and low strength commercial development the maximum allowable SDCr is $927 per EDU. For medium and high strength commercial development the maximum allowable SDCr per EDU is $1,017 and $1,190, respectively. The same process is used to determine the improvement fee (SDCi) per EDU shown in Table ~~9~~ 10. The maximum allowable SDCi ranges from $6,162 per EDU for residential and low strength commercial, to $11,977 per EDU for high strength commercial.

Because of the variability and system impact of significant industrial customers, these users are charged based on their individual flows and loads, and the system unit costs of capacity from Tables ~~9~~ 10 and ~~9~~ 10. For purposes of determining peak flows, MMDWF and PWWF are combined, and assessed each industrial customer based on their peak day flow. The formula for charging industrial customers as as follows:

Average flow (mgd) X $3,043,765 + Peak flow (mgd) X $7,266,838 + MMBOD (lbs/day) X $3,032 + MMTSS (lbs/day) X $1,200

Compliance Costs

Local governments are entitled to expend SDC revenue on the costs of complying with the SDC statutes. Compliance costs generally include costs associated with developing the SDC methodology and project list (i.e., a portion of master planning costs). **Table ~~10~~ 11** shows the calculation of the compliance charge per EDU. SDC study costs are 100 percent related to new growth, and master planning costs are allocated in proportion to the growth share of total project costs from Tables 5 and 6 combined (91 percent). Growth costs are annualized by dividing the estimated cost for each item by the estimated number of years before update (5 years for SDC study, and 10 years for master planning). The total annual costs are then divided by the estimated annual number of new EDUs which yields a fee of approximately $37 per EDU.

Table ~~10~~ 11
City of Albany Sewer System SDC Analysis
Compliance Charge

Component	Years	Total	Growth	Annualized
SDC Study	5	$25,000	100%	$5,000
Master Planning[1]	10	$500,000	91%	$45,294
Total Annual Costs		$525,000		$50,294
Estimated Additional EDUs per year				1,358
Compliance Charge/EDU				**$37**

[1]Albany portion of costs only

Maximum Allowable SDC Fee

Table 12 provides a summary of SDCs per EDU indexed from the December 2017 ENR Construction Cost Index (11,443) to the April 2022 ENR Construction Cost Index (14,493.29):

Table 12
City of Albany Sewer System SDC Analysis
Inflation Adjusted SDCs per EDU

SDC Component	December 2017 (ENR = 11443)	April 2022 (ENR = 14493.29)
Reimbursement Fee/EDU		
Residential/Low	**$926**	**$1,173**
Medium	**$1,017**	**$1,288**
High	**$1,190**	**$1,507**
Improvement Fee/EDU		
Residential/Low	**$6,162**	**$7,805**
Medium	**$8,004**	**$10,138**
High	**$11,977**	**$15,170**
Compliance/EDU	**$37**	**$47**

The maximum allowable combined reimbursement and improvement SDCs per EDU for residential and commercial customers are shown in **Table ~~11~~ 13**. ~~The maximum allowable combined SDC for a residential dwelling unit is $7,088.~~ Table ~~11~~ 13 also shows the total maximum allowable SDC per EDU, inclusive of compliance costs for each **residential** development category. The combined SDC, **including the compliance charge** for a **typical single-family** residential dwelling unit is ~~$7,125~~ **$9,024**.

Table 13
City of Albany Sewer System SDC Analysis
Combined Maximum Allowable SDC per Equivalent Dwelling Unit

Component	EDUs	Amount[1] per Dwelling Unit
Single Family Residential		
Reimbursement SDC per EDU	1.00	$1,173
Improvement SDC per EDU	1.00	$7,805
Compliance Fee	1.00	$47
Total SDC per Typical Single-Family EDU	**1.00**	**$9,024**
Single-Family Residential Tiers		
Tier 1	0.73	$6,588
Tier 2	0.89	$8,032
Tier 3	1.00	$9,024
Tier 4	1.09	$9,836
Duplex/Triplex/Fourplex per Dwelling Unit	0.90	$8,122
Apartment (>4 units) per Dwelling Unit	0.68	$6,137

[1]Costs are indexed to April 2022 ENR Seattle CCI (14,493.29)

Commercial development is charged based on the number of EDUs, where a typical EDU is estimated to have six (6) plumbing fixtures (sinks, toilets, etc). The maximum allowable SDC per EDU ranges from $9,024 for low strength commercial, to $16,724 for commercial high strength, for the first six plumbing fixtures, as shown in Table 14.

Table ~~11~~ 14
City of Albany Sewer System SDC Analysis
Combined Maximum Allowable SDC per ~~Equivalent Dwelling Unit~~ Commercial and Industrial Unit[1]

Component	Amount (Up to 6 Fixtures)	$/Additional Fixture (Over 6)
Commercial SDC		
Commercial Low	*$9,024 ~~$7,125~~*	*$1,504 ~~$1,188~~*
Commercial Medium	*$11,473 ~~$9,055~~*	*$1,912 ~~$1,510~~*
Commercial High	*$16,724 ~~$13,204~~*	*$2,787 ~~$2,201~~*

Industrial SDC Formulas:
Average flow (mgd) X ~~$3,043,765~~ $3,855,123 + Peak flow (mgd) X ~~$7,266,838~~ $9,203,914 + MMBOD (lbs/day) X ~~$3,032~~ $3,840 + MMTSS (lbs/day) X ~~$1,200~~ $1,520
Compliance charge = ~~$37~~ $47 X number of EDUs, where EDUs = (Combined SDCi and SDCr) / ~~$7,088~~ $8,977

[1]Costs are indexed to April 2022 ENR Seattle CCI (14,493.29)

As discussed previously, industrial customers are charged based on their individual flows and loadings applied to the unit costs of capacity. For purposes of determining compliance charges, an industrial customer's EDUs are estimated by dividing the combined SDCi and SDCr for the customer by $8,977 (the combined SDCi and SDCr for a residential dwelling unit) to determine the number of EDUs, and then multiplying the number of EDUs by $47 per EDU.

Inflationary Adjustments

In accordance with Oregon statutes and current City's policy, the SDCs will be adjusted annually based on a standard inflationary index. Specifically, the City plans to use the ENR Seattle CCI as the basis for adjusting the SDCs annually. All costs in this report have been indexed to the December 2017 **April 2022** ENR CCI for Seattle, ~~11,443~~ **14,493.29**.