



CITY OF BEND



Methodology Report

Sewer System Development Charges

Prepared for City of Bend

March 31, 2024



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Abbreviations and Acronyms

ADWF	Average Dry Weather Flow
ADU	Accessory Dwelling Unit
AMI	Area Median Income
BDC	Bend Development Code
BPRD	Bend Park & Recreation District
CCI	Construction Cost Index
CIP	Capital Improvement Program
City	City of Bend
COB	City of Bend
EDU	Equivalent Dwelling Unit
ENR	Engineering News Record
FY	Fiscal Year
GPD	Gallons Per Day
GRG	Galardi Rothstein Group
ORS	Oregon Revised Statute
SDC	System Development Charge
SQ FT	Square feet
TI	Tenant Improvements
WQA	Winter Quarter Average

1. Introduction

Authorization

In September 2022, the City of Bend (City) contracted with Galardi Rothstein Group (GRG) to perform a limited update to the sewer System Development Charge (SDC) methodology. Specifically, the scope of the update includes modification to the way the City assesses SDCs to different types and sizes of development (in coordination with similar updates performed for the water and transportation SDC methodologies).

The methodology update presented in this report changes only the land use categories and associated service requirements that provide the basis for how individual developments will be charged. It does not include any changes to the City's sewer SDC project list or other elements of growth costs or the projected growth in sanitary sewer flows attributed to future development in aggregate. This methodology update relies on the growth costs and projected systemwide sewer flows documented in the *Final Report for Sewer System Development Charge Study* (FCS Group, June 2015), adopted by City Council on August 19, 2015, as Resolution No. 3003, and subsequent indexing of growth costs by the City to reflect cost inflation.

While the underlying growth costs and aggregate growth requirements do not change because of the methodology presented in this report, a revised SDC schedule is presented in Appendix A that reflects the updated SDC land use categories and service requirements that are the focus of this update. The City intends to update the sewer SDC project list and other elements of the methodology following completion of the Collection System Master Plan update.

This report presents the updated methodology that was developed in conformance with Oregon Revised Statutes (ORS) 223.297-223.316 (SDC Statutes), industry standards, and the City's policy objectives documented in the water and transportation SDC reports.

Report Organization

The following sections are included in this report:

- Section 1 – Introduction – Presents project authorization and report organization.
- Section 2 – Updated SDC Charge Basis – Provides information on the new land use categories and the estimated sewer service requirements of each category.
- Appendix A – SDC Schedule – Provides the SDCs by land use category that are the product of the SDC methodology changes and existing SDC cost assumptions. Also provides a description of each category. Consistent with ORS 223.304(8) and the Bend Municipal Code, the fees presented in Appendix A may be adjusted periodically for changes in costs or changes to the project list. The SDC Schedule adopted by the Bend City Council will be the applicable fee schedule.
- Appendix B – Exemptions for Certain Developments – Describes uses that will be exempt from payment of SDCs, subject to recording of deed restrictions. Also summarizes credits available on redevelopment of previously exempt uses. The provisions of the Bend Municipal Code control availability of credits.
- Appendix C -- Provides nonresidential sanitary flows from other agencies, for available SDC categories, that were used to benchmark revised nonresidential category flow assumptions.

Rounding

The calculations contained in this report were produced by computer spreadsheets where numbers extend beyond the decimal places shown in the tables presented, so slight variations exist due to rounding. However, these variations are not material.

Updated Methodological Framework

Key aspects of the updated sewer SDC methodology are summarized in Table 1-1. The methodology is comprised of two distinct components: 1) “Cost Basis” – the determination of growth-related system capacity costs in aggregate, and 2) “Charge Basis” – the determination of how individual development will be charged. This methodology update includes only changes to the Charge Basis, as summarized below, and addressed in more detail in Section 2 of this report. Controlling definitions for SDC categories in Table 1-1 are provided in the fee schedule adopted by the Bend City Council by resolution.

Table 1-2. Sewer SDC Methodology Framework

Methodology Element	Approach
SDC Cost Basis (Section 2)	<i>Unchanged from current SDCs and 2015 Final Report for Sewer System Development Charge Study</i>
SDC Charge Basis (Section 3) ^a	
Residential	<ul style="list-style-type: none">• Single unit and “middle” housing: tiered SDC structure with six (6) living area size tiers.• Multi-unit and other housing: uniform SDC per unit by housing type.• Accessory dwelling units: no SDC if served by water meter of primary unit.
Nonresidential	<ul style="list-style-type: none">• “Wet” Industrial: Charged based on estimated average dry weather flow for development (as determined from a sewer analysis).• Other development: SDCs based on cost per unit by type of land use.^b

^a “Middle” housing is defined in the Bend Development Code. See SDC fee schedule for other development category definitions.

^b Units for most uses are gross square feet of building area.

SDCs are needed to provide the infrastructure to make development of new housing and employment centers possible. However, for housing, there is also a recognition that SDCs assessed uniformly without consideration for the dwelling size or development context may not adequately reflect the relative service requirements of different sized units, as estimated from the City’s water consumption data (used to estimate sewer flows). Furthermore, uniform SDCs may contribute to affordability challenges for smaller dwellings.¹ Therefore, the sewer SDC methodology is designed to scale residential SDCs based on the type and size of the housing unit (i.e., lower SDCs for smaller and higher density multi-units and higher SDCs for larger and lower density single units), reflecting relative sanitary sewer flows estimated from existing customer water use data, as a means of balancing the City’s infrastructure funding and housing needs.

¹ See for example Oregon System Development Charges Study: Why SDCs Matter and How They Affect Housing, Prepared for Oregon Housing and Community Services (December 2022).

Similarly, the SDCs for nonresidential development are also scaled based on the size and type of the development. For most land use types, the SDCs will be charged based on a standardized SDC schedule. However, for industrial uses, where the sewer flows may vary widely, the SDC will be based on estimated sanitary sewer flows specific to the development (as determined by a sewer analysis) and charged according to the average cost per gallon identified on the SDC schedule.

Policy Recommendations

Beyond methodological incentives, the City is considering policy-based incentives that reduce or exempt SDCs for certain development types. Certain uses will be exempt from payment of SDCs, and either subject to a durational deed restriction requiring the exempt use to remain in place for a certain period, or requiring that on redevelopment, SDCs are paid without a credit for an existing, exempt use. Exemptions and credits are addressed in the Bend Municipal Code, and in attached Appendix B, describing the uses to which exemptions apply.



2. Charge Basis

Introduction

The updated sewer SDCs are determined for individual developments based on the sewer SDC unit cost of capacity and the estimated service requirements of the development. Sewer service requirements for individual developments are both a function of the type of land use and the scale of the development, as described further in the subsections that follow.

As mentioned previously, this methodology does not include any changes to the City's sewer SDC project list or other elements of growth costs or the projected growth in sanitary sewer flows attributed to future development, which serve as the basis for the sewer SDC unit cost. Therefore, for the purposes of presenting SDCs under the revised land use categories and service requirements (shown in Appendix A), the unit cost of capacity determined from the City's adopted FY2023-2024 fee resolution (Resolution No. 3340) is used.

The FY2023-2024 fee schedule establishes the sewer SDC per Equivalent Dwelling Unit (EDU) as \$5,792. Furthermore, the 2015 *Final Report for Sewer System Development Charge Study* defines the average dry weather flow (ADWF) per EDU as 200 gallons per day (gpd). Thus, the unit cost of capacity is \$28.96 per gpd (\$5,792 divided by 200 gpd). As allowed by SDC Statutes (and the Bend Municipal Code), the City may update the SDCs (restated under the updated SDC categories in Appendix A), based on future application of an independent cost index to capture increased costs from the date of the last fee schedule inflationary adjustment.

Sewer SDC Categories

A primary objective of the updated SDC methodology framework is greater efficiency and consistency in how SDCs are determined across the City's water, sewer, and transportation systems. Establishing a limited number of land use categories with individualized fees is key to enhanced administrative efficiency and clarity. Part of the efficiency gained from this type of approach is a reduction in the number of SDC reassessments for commercial and industrial tenant improvements (TI) for changes in use alone. A methodology with fewer distinct SDC categories may also make it easier for developers to estimate charges for a particular project, as the overlap between categories is reduced. As indicated in *Proportionate Share Impact Fees and Development Mitigation*:

An alternative approach is to use a smaller number of broader, more generalized nonresidential categories. Having learned that attempts to enumerate every possible land use in the fee schedule is both unnecessary and overly complicated, many communities are now moving in this direction.²

Therefore, consistent with current industry practice and the City's policy framework, the SDC schedule shown in Table A-1 (Appendix A) consolidates similar uses into eight (8) primary residential and about two dozen primary nonresidential SDC categories. Sample development types and descriptions of each category are also provided in Appendix A. Many of the category definitions are based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual*,

² "Arthur C. Nelson, James C. Nicholas, Julian Conrad Juergensmeyer, and Clancy Mullen, *Proportionate Share Impact Fees and Development Mitigation* (Routledge, 2023), 128.

11th edition, as the revised category framework also applies to the transportation SDC methodology. These categories will be included in the City's adopted fee resolution. The City may periodically review, and update SDC category definitions included in the SDC fee resolution, as needed to reflect more current editions of the ITE manual and evolving land use types and forms developing in the City. Such updates will not be considered changes to this methodology.

Residential Categories

Table 2-1 shows the residential SDC categories included in the updated SDC methodology framework. Single unit (detached and attached units on individual lots or parcels) and middle housing with two-four units (e.g., duplex, triplex, quadplex, cottages, and townhomes) are combined for SDC assessment purposes and will be charged according to tiers based on size of living area of the unit. Under Oregon House Bill 2001 (2019) and the City's development code, any lot zoned for single unit detached housing may also be developed with up to four units (attached or detached), so combining these housing types is administratively straightforward, and a tiered structure enhances equity within the overall category, as it scales the SDC in proportion to sewer service requirements.

Scaled SDCs that charge lower fees for smaller homes and higher fees for larger homes are a way to capture different system impacts and balance the City's housing affordability objectives with the need to fund infrastructure.³ For residential development, U.S Census data generally show a relationship between the size of the dwelling unit and the number of occupants which is a factor in demand for most types of infrastructure. National and local research have indicated that building size is a strong predictor of water consumption (impacting both water and wastewater systems).⁴

Multi-unit development categories include attached or detached housing (more than four units on a single lot or parcel) and categories for small multiple-unit developments (micro or single occupancy units), dormitories, and attached age-restricted senior housing without care facilities. For these categories, a uniform SDC per dwelling unit applies within each category due to the relatively limited dwelling size and water use variations observed from available City of Bend billing data (compared to single unit and middle housing units), the additional complexity of measuring individual units in larger scale multi-unit development, and affordability concerns for family-sized units.

Other housing categories are limited to continuing care facilities (defined as facilities that provide a continuum of housing types along with medical care facilities and other amenities such as dining) and accessory dwelling units (ADUs). Based on the current and continued recommended policy framework, the City does not charge water or sewer SDCs for ADUs that may be accommodated by the same water meter size as the primary dwelling unit.

³ As noted in *Proportionate Share Impact Fees and Development Mitigation*: "Moreover, when calibrated to reflect the costs of housing – where smaller homes on smaller lots in areas that cost less to serve are assessed at a lower value than larger homes on larger lots – impact fees can improve housing affordability.", xxxv.

⁴ See for example "Residential End Uses of Water" (Water Research Foundation, 2014) which found indoor water use to be most significantly impacted by household size and "Spatial Variations of Single-Family Residential Water Consumption in Portland, Oregon" Chang, H., Parandvash, G.H. and Shandas, V. (2010) which found building size to be the best indicator of water consumption for single-family residential households, followed by building density.

Table 2-1. Residential SDC Categories^a and Service Requirement Measure

SDC Category	Unit of Measure
<i>Single Unit & Middle Housing</i>	
Living Area Tiers	Dwelling Unit
Tier 1 (<600 SQ FT)	Dwelling Unit
Tier 2 (601-1200 SQ FT)	Dwelling Unit
Tier 3 (1201-1600 SQ FT)	Dwelling Unit
Tier 4 (1601-2200 SQ FT)	Dwelling Unit
Tier 5 (2201-3000 SQ FT)	Dwelling Unit
Tier 6 (>3001 SQ FT)	Dwelling Unit
<i>Multi-Unit Housing</i>	
Housing >4 units	Dwelling Unit
Manufactured Dwelling Park, per pad	Dwelling Unit/Pad
Micro-Units/Single Occupancy	Dwelling Unit
Dormitories	Room
Attached Sr. Housing (55+ restricted, no care)	Dwelling Unit
<i>Other Housing</i>	
Continuing Care Facility ^b	Units
Accessory Dwelling Unit ^c	Dwelling Unit

^a Single unit housing includes manufactured homes (up to 3) on single lots and senior detached housing. Middle housing = 2-4 dwelling units on one lot, including townhomes and cottage housing, as defined in the Bend Development Code. Full category descriptions are included in Appendix A and controlling definitions are found in the City's adopted fee resolution.

^b Units include a mix of beds and dwelling units in these facilities.

^c ADU = dwelling unit if water meter needed to serve primary dwelling unit plus the ADU is larger than the meter sized for primary dwelling unit on the property.

Nonresidential Categories

Table 2-2 shows the nonresidential SDC categories and units of measure included in the sewer SDC methodology framework. The determination of nonresidential categories began with an analysis of the City's existing categories for transportation and sewer SDCs which included dozens of land use types.

Standard Categories

As shown in Table 2-2, the nonresidential SDC framework includes standard use categories that will be charged based on gross square feet (SQ FT) of building area (consistent with the City's current SDC methodology for most categories and the updated water and transportation SDC methodologies). For industrial and manufacturing uses, the methodology includes a standard industrial rate and a formula for calculating the SDCs for 'wet' industries (i.e., any industry that uses water in the manufacturing process, or for cleaning, packaging, etc.) based on individual customer estimated sewer service requirements, as further defined in the SDC fee resolution adopted by the City Council.

Table 2-2. Nonresidential SDC Categories and Units of Measure

SDC Category	Unit of Measure
Standard Categories	
Industrial/Manufacturing ^{ab}	1,000 SQ FT
Warehouse/ Storage/ Dist. Center	1,000 SQ FT
Movie Theater	1,000 SQ FT
Indoor Fitness & Recreation	1,000 SQ FT
Church/ Religious Organization	1,000 SQ FT
Hospital	1,000 SQ FT
Medical-- Dental-- Vet Office	1,000 SQ FT
General Office	1,000 SQ FT
Stand-Alone Retail/Services with >50% Floor Area Warehouse/Storage	1,000 SQ FT
Stand-Alone Retail/Services	1,000 SQ FT
Integrated Retail/Services ^c	1,000 SQ FT
Super Store (with or w/out membership & discount) ^b	1,000 SQ FT
Car Sales ^b	1,000 SQ FT
Supermarket ^b	1,000 SQ FT
Convenience Store	1,000 SQ FT
Furniture Store	1,000 SQ FT
Bank/Financial Institution	1,000 SQ FT
Restaurant (Table Service)	1,000 SQ FT
Quick Service Restaurant ^b	1,000 SQ FT
Special Unit Categories	
Public Parks, Private/Public Golf Course, Common Areas ^b	na
Community Space	1,000 SQ FT
Golf Course Club House	1,000 SQ FT
Restroom	Each
Outdoor Pool	1,000 SQ FT Surface Area
Childcare (presently exempted in methodologies)	Child
School K-12	Student
College/University	Student
Gas Sales/Service Station ^b	Site/Service Position
Manual Car Wash ^b	Bay
Automated Car Wash ^b	Bay
Hotel/Motel/RV Park ^b	Room or Space
RV Dump Station (for Park)	Unserviced Space
RV Dump Station (for Public)	Each
"Wet" Industrial User	
Industrial/Manufacturing ^{ab}	GPD water use

na = not applicable; GPD = Gallons per Day.

NOTE: See category definitions in Appendix A and the City's adopted fee resolution.

^a "Wet" industry (industrial customers that use water in the manufacturing process, or for cleaning, packaging, etc.) required to prepare individual water and sewer analysis.

^b Individual category rates apply even if part of integrated development. For Quick Service Restaurants, only those with a drive-thru will be charged individual category rates, even if included in an integrated development.

^c Integrated development is defined as a development that is planned or developed as a unit with features such as shared parking or access.

Retail/Services categories shown in Table 2-2 apply to most forms of retail/service establishments if not otherwise listed in the table. For retail/services uses that are part of an integrated group of commercial establishments⁵ (e.g., shopping centers, “strip” retail, and retail space within a mixed-use building), the “Integrated Retail/Services” category applies to all uses, except the following which will be charged based on the individual category rates and SDCs shown in the fee schedule:

- Industrial/manufacturing
- Hotels and other tourist accommodations
- Parks
- Quick-service restaurants with drive-throughs
- Super stores
- Supermarkets
- Car washes
- Gas sales/service stations
- Car sales

Individual category rates listed in the SDC schedule (e.g., Medical – Dental – Vet Office, Indoor Fitness and Recreation, General Office, Movie Theater, etc.) will apply in any case if the land use is the primary use.⁶ For Stand-Alone Retail/Service uses that have greater than 50 percent floor area used for warehouse/storage, separate categories (and SDCs) are provided due to the different service requirements of these mixed uses.

Special Categories

As shown in Table 2-2, there are several uses (e.g., schools, gas sales, car wash, and lodging and outdoor park and recreation facilities) that will be charged based on units of measure other than building area or where the units of measure differ from the transportation SDC methodology (e.g., public pools, community spaces, etc.).

Sewer Service Requirements

General Approach

As discussed previously, the sewer SDCs are designed to recover costs from individual developments in proportion to their estimated ADWF volume. According to the City of Bend Collection System Master Plan (CSMP) dry weather flows are comprised of base wastewater flow (contribution from system users) and groundwater infiltration.⁷ Projected growth in ADWF that serves as the basis for the existing sewer SDC unit cost (i.e., growth costs divided by projected growth in ADWF), equates to 200 gpd per EDU and represents the “burden on the sewer system of the average single-family residence”.⁸

⁵ Integrated development is defined as a development that is planned or developed as a unit with features such as shared parking or access. See Appendix A for full definition.

⁶ Refer to the Bend Development Code for definitions of “use, primary” and “use, secondary”, to determine appropriate categories.

⁷ Murraysmith, December 2014, Vol 1., 1-10.

⁸ *Final Report for Sewer System Development Charge Study*, FCS Group (June 2015), 4.

Customer billing data and information on structure SQ FT provided by the City were used to estimate base sewer flows per dwelling unit for each residential category relative to an average single unit dwelling for the purpose of estimating ADWF for each category. Customer billing data and structure SQ FT information were also used to estimate ADWF for nonresidential categories, where billing data were available. Information from other agencies and industry publications supplemented billing data for some categories and was used to benchmark results for other categories, as described further below.

Residential Service Requirements

Single Unit and Middle Housing

The City provides sewer service to over 32,000 residential accounts. Water service to approximately one-third of residential accounts located in the City is provided by other providers (i.e., Roats and Avion). The City provided monthly water consumption data for the period 2017-2022 for each water customer account and winter quarter average (WQA) consumption for each sewer account served by another provider.⁹ Water use during the winter months is used as the basis for charging user fees for residential dwellings because it excludes summer irrigation volumes that do not contribute to sanitary sewer flows.

Available information from the Deschutes County Assessor's Office was also provided by the City for each existing customer account, including dwelling type, number of units, and unit size as measured by SQ FT of living area.¹⁰ From this data, an analysis of the relationship between living area and WQA water use was conducted for purposes of estimating relative sewer base flows for different size dwelling units. Summary statistics from this analysis are shown in Table 2-3. The base (WQA) flows per unit relative to an average unit (114 gpd) are then used to estimate the ADWF per unit for each category based on the existing methodology assumption of 200 gpd ADWF per EDU.

Table 2-3. Single Unit and Middle Housing Service Requirements per Dwelling Unit

System Component	Number of Dwellings	% of Dwellings	GPD/Unit (WQA) ^a	GPD/Unit (ADWF) ^b
<i>Average/EDU (for comparison only)</i>			114	200
Living Area Tiers				
Tier 1 (<600 SQ FT)	182	0.6%	63	111
Tier 2 (601-1200 SQ FT)	4,365	13.5%	101	177
Tier 3 (1201-1600 SQ FT)	7,274	22.5%	110	193
Tier 4 (1601-2200 SQ FT)	10,501	32.5%	114	200
Tier 5 (2201-3000 SQ FT)	6,705	20.8%	121	211
Tier 6 (>3001 SQ FT)	3,257	10.1%	132	231
Total	32,284	100.0%		

GPD = Gallons per Day, WQA = Winter Quarter Average

^a Reflects average consumption during the months of December through February.

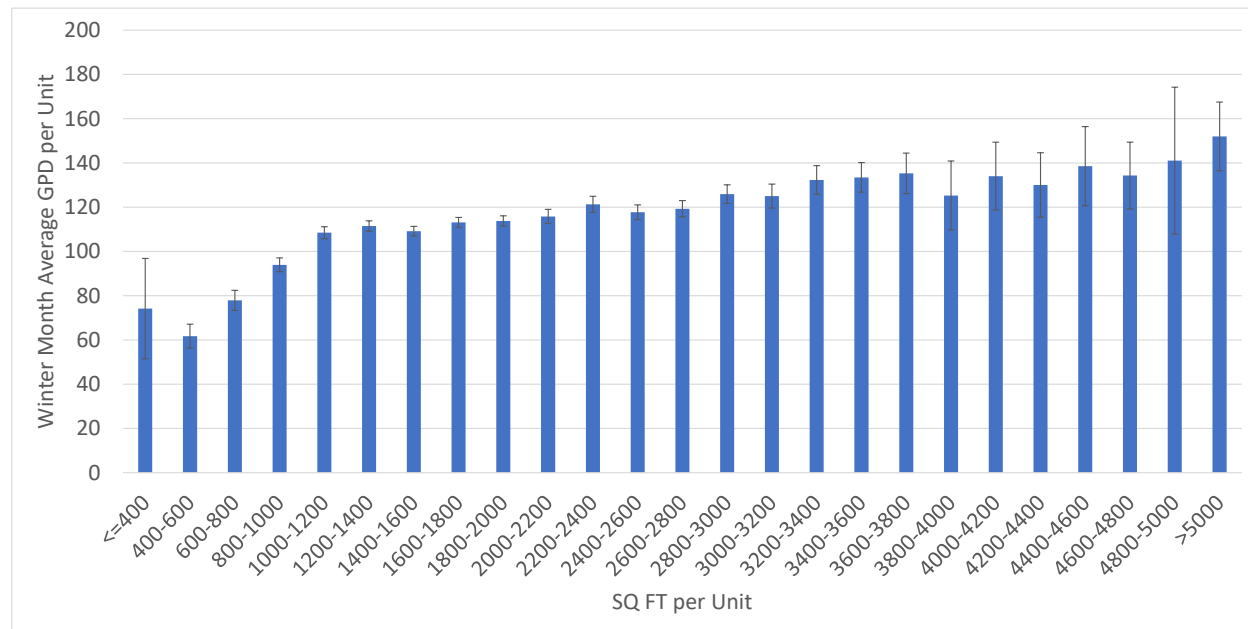
^b Adjusted to current average dry weather flow (ADWF) estimates per equivalent dwelling unit.

⁹ Use volumes for City of Bend customers were provided by the City for each month over the five years. Cubic feet per month were then converted to gallons per day by multiplying by 7.481 gallons per cubic feet and dividing by an estimated 30 days per month. Winter quarter average volumes were estimated by averaging the months of December, January, and February.

¹⁰ Deschutes County Property Information System records do not provide individual dwelling unit sizes for middle housing attached structures on the same lot. In this case, the total square footage for tax lot was assumed to be equally distributed across all units.

Figure 2-1 shows the WQA water use per unit for single unit and middle housing units across the full spectrum of unit sizes that was used to evaluate alternative SDC tier structures. While the relationship between house size and winter water use is less linear across the broad range of structure sizes, house size is a significant factor in predicting winter water use, and the rate of increase in use per SQ FT category, is particularly significant at the lower ends of the size spectrum.

Figure 2-1. Single Unit and Middle Housing WQA Water Use (GPD) per Unit by Size of Unit (SQ FT of Living Area) and Margin of Error



Several tier options were considered before the six-tier structure shown in Tables 2-1 and 2-3 was selected as the preferred option by a majority of stakeholders that participated in the SDC update process. Initially, two scaling options were developed using a five-tier structure. A five-tier structure is currently used by the Bend Park and Recreation District (BPRD) for SDC purposes; however, the BPRD tiers (defined through an earlier SDC methodology development process) are not consistent with the City’s current development code as it applies to small dwelling units and alternative housing types. Specifically, the City’s current development code¹¹ defines some small dwelling unit types (e.g., cottage housing) as structures between 600 SQ FT and 1,200 SQ FT, while BPRD’s SDC structure has tiers include cut-offs at 500 SQ FT and 1,000 SQ FT. The recommended sewer tier structure includes cut-offs at 600 SQ FT and 1,200 SQ FT for consistency with the City’s current development code.

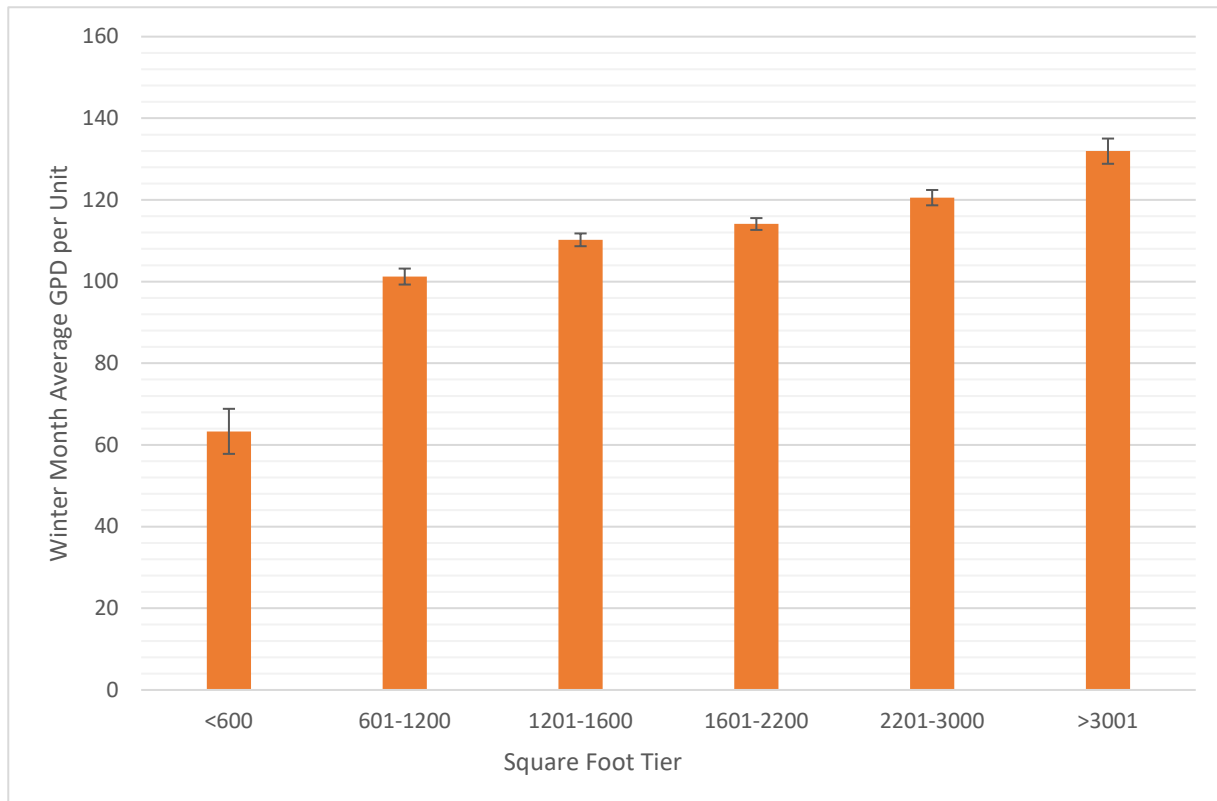
Furthermore, at the suggestion of members of an SDC stakeholder group¹², a sixth tier was included to provide additional incentives on the lower end of the dwelling size range, compared to the five-tier options. Specific breakpoints for the tiers were selected based on both statistical significance of tiers across infrastructure systems (given the City’s desire for a uniform tiering structure for water, sanitary sewer, and transportation infrastructure), and the development code considerations.

¹¹ Bend Development Code BDC 3.8.300.

¹² The City conducted six (6) stakeholder meetings over the course of the SDC update that included participation from members of the City Council and various organizations. As of the date of adoption of this methodology, detailed meeting summaries and recordings are available on the City’s website. Archive copies may be available on request.

Figure 2-2 shows the average use and margin of error bars for each tier. The margin of error is an indication of the variability of the data and the confidence of individual estimates. Larger error bars can be an indication of more variability in a tier or smaller sample sizes (as is the case for Tier 1 “<600”). Evaluation of confidence intervals provides the opportunity to group dwelling unit sizes such that the average use within each tier is distinct from other tiers.

Figure 2-2 Single Unit and Middle Housing WQA Water Use (GPD) per Unit by Living Area Tier and Margin of Error



Multi-Unit and Other Housing Requirements

Sewer service requirements for multi-unit and other housing units are derived from a combination of City utility billing data, U.S Census data, and benchmark information where local data was not available. Summary statistics for each category are shown in Table 2-4. Like the single unit analysis, WQA water use per unit is adjusted to ADWF based on the water use for the category relative to an EDU.

As discussed previously, the SDC structure for multi-unit and other housing is based on a uniform average service requirement per unit to balance both technical considerations and policy objectives. City billing data were used to determine WQA consumption for housing units greater than four (4) units and manufactured dwelling units in parks. For micro-units and single occupancy units, the WQA reflects 61 percent of the multi-unit “housing >4 units” category. This is based on the ratio of average occupants for a studio dwelling with 0 bedrooms (1.10 person) relative to the overall multi-unit housing average (1.78 persons) from U.S. Census data for Deschutes County.¹³ The dormitory category rate is the same as the micro-unit rate and is similar to assumptions used by other communities, as shown in Appendix C. Benchmark information for senior attached housing and continuing care categories is based on information

¹³ 2020 American Community Survey Public Use Microdata Sample (PUMS) for Deschutes County. (PUMS Microdata Area 00400)

from the 2019 Water Research Foundation Report: *Developing Water Use Metrics for Commercial and Institutional Sectors*.¹⁴

Table 2-4. Multi-Unit and Other Housing Service Requirements per Dwelling Unit

System Component	Source of Estimate	GPD/Unit (WQA Water Use)	GPD/Unit (ADWF) ^a
Multi-Unit Housing			
Housing >4 units	Billing Data	92	160
Manufactured Dwelling Park, per pad	Billing Data	99	173
Micro-Units/Single Occupancy ^b	Billing & Census Data	56	97
Dormitories	Benchmark Data	56	97
Attached Sr. Housing (55+ restricted, no care) ^c	Benchmark Data	89	107
Other Housing			
Continuing Care Facility ^c	Benchmark Data	100	120
Accessory Dwelling Unit ^d	na	na	na

GPD = Gallons per Day, WQA = Winter Quarter Average, na = not applicable

^aAdjusted to ADWF based on WQA relative to EDU and 200 gpd per EDU.

^bMulti-unit housing >4 units rate X 0.61 (1.10 persons per unit average occupancy for 0- bedroom units/1.78 average occupancy for all multi-units).

^cBased on data from 2019 Water Research Foundation report 4619A (*Developing Water Use Metrics for Commercial and Institutional Sectors*).

^d ADU = dwelling unit if water meter needed to serve primary dwelling plus the ADU is larger than meter sized for primary dwelling unit on property.

Nonresidential Service Requirements

Sewer service requirements for nonresidential SDC categories are derived from City billing data (for most standard categories), and benchmark information for other specialty categories. For purposes of estimating ADWF for nonresidential customers, annual average water use over the historical period was used to capture seasonal fluctuations in base flows and groundwater infiltration. Estimated ADWF flows resulting from the billing data analysis were then compared to the range of flows from other agencies used for assessing sewer SDCs and other uses. Summary statistics are shown in Table 2-5.

¹⁴ Fedak, R., D. Hannon, Z. Taylor, and A. Volckens. 2019. *Developing Water Use Metrics for the Commercial and Institutional Sectors*. Project 4619a. Denver, CO: The Water Research Foundation.

Table 2-5. Nonresidential SDC Categories and Service Requirements per Unit

SDC Category	Source of Estimate	GPD/Unit (Est. ADWF) ^a	GPD/Unit (Benchmark Range) ^b
<i>Standard Categories (per 1,000 SQ FT Building Area)</i>			
Industrial/Manufacturing	Billing Data	70	60-137
Warehouse/ Storage/ Dist. Center	Billing Data	38	17-140
Movie Theater	Benchmark	111	66-160
Indoor Fitness & Recreation	Billing Data	236	131-600
Church/Religious Organization	Benchmark	62	33-100
Hospital	Billing Data	250	205-300
Medical - Dental - Vet Office	Billing Data	154	143-300
General Office	Billing Data	92	38-250
Stand-Alone Retail/Services with >50% Floor Area Warehouse/Storage	Billing Data	39	na
Stand-Alone Retail/Services	Billing Data	81	25-180
Integrated Retail/Services	Billing Data	129	137-325
Super Store (with or w/out membership & discount)	Billing Data	90	125-324
Car Sales	Billing Data	76	66-203
Supermarket	Billing Data	169	150-246
Convenience Store	Billing Data	110	100-246
Furniture Store	Billing Data	39	41
Banks/Financial Institutions	Billing Data	89	62-150
Restaurant (Table Service)	Billing Data	441	494-1000
Quick Service Restaurant	Billing Data	441	410-1000
<i>Special Unit Categories (Units Vary)</i>			
Public Parks, Private/Public Golf Course, Common Areas			
Community Space (per 1,000 SQ FT)	Benchmark	62	33-100
Club House (per 1,000 SQ FT)	Billing Data	113	100-200
Restroom (each)	Benchmark	250	250
Outdoor Pool (1,000 SQ FT surface area)	Benchmark	139	100-179
Childcare (presently exempted in methodologies) (per child)	Benchmark	5	4-10
Schools K-12 (per student)	Billing/Benchmark	9	9-20
College/University (per student)	Billing/Benchmark	15	9-75
Gas Sales/Service Station (each)	Benchmark	450	450-500
Manual Car Wash (per bay)	Benchmark	300	299-1200
Automated Car Wash (per bay)	Benchmark	3700	1300-5500

SDC Category	Source of Estimate	GPD/Unit (Est. ADWF) ^a	GPD/Unit (Benchmark Range) ^b
Hotel/Motel/RV Park (per room or space)	Billing Data	91	109-175
RV Dump Station for Park (unserved space)	Benchmark	50	50-57
RV Dump Station for Public (each)	Benchmark	500	na
"Wet" Industrial/Manufacturing	Customer Sewer Analysis	GPD ADWF	na

ADWF=Average Dry Weather Flow, GPD = Gallons Per Day, na = not available

^aReflects 12-month average use 2017-2022, except for schools which are based on 2022-2023 winter average water use adjusted to sewer ADWF capacity requirements based on the EDU/WQA ratio applied to residential customers, as shown in Table 2-3.

^bSee Appendix C.

Standard Development Categories

As for residential customers, the City provided monthly water consumption data for the period 2017-2022 for each nonresidential water customer account. Available information from the Deschutes County Assessor's Office was also provided for each account, including building size as measured by total square feet (SQ FT) of building area.¹⁵ The City also provided information on the type of nonresidential account, where information was available from business license data. Average annual consumption per 1,000 SQ FT of building area was used to estimate ADWF for each category.

Sample sizes for land use categories within the City of Bend billing database vary. Furthermore, verification of information for individual tax lots and utility accounts is beyond the scope of this study. Therefore, data from other local and state agencies (summarized in Appendix C) were used to benchmark the billing data analysis results, and in some cases supplement the analysis where sample sizes were small (e.g., churches and religious organizations).

Special Unit Categories

Sewer flow assumptions are based on benchmark data for car washes, gas sales/service stations, pools, and restrooms. Billing data and room counts for lodging customers provided by the City were used to determine lodging service requirements per room. Service requirements for community spaces are based on benchmark data for churches. Golf course club house service requirements reflect City billing data.

Billing data was also provided by the City for about two dozen school accounts. Specifically, water use information for 2022 and 2023, December through April billing period was analyzed to develop water use estimates per student per school day.¹⁶ Use estimates were then adjusted to SDC capacity requirements (ADWF) using the sewer capacity/winter average use factor applied to residential winter quarter water use (i.e., 200 gpd EDU/114 gpd WQA = 1.75 factor). The

¹⁵ Deschutes County Property Information System records do not provide individual SQ FT estimates for structures on the same lot. In this case, the total square footage for tax lot was assumed to be equally distributed across all structures.

¹⁶ Student enrollment information from Bend-La Pine Schools Enrollment Forecasts 2022-23 to 2041-42 published by Portland State University Population Research Center.

results of the billing analysis were then benchmarked against published water use and regression analyses,¹⁷ which showed general alignment with the results.

“Wet” Industries

SDCs for larger and more intensive industrial sewer dischargers like breweries, distilleries, data centers and other customer that use water in the manufacturing process (for product, cleaning, etc., as defined in the adopted SDC fee resolution) will be determined based on the estimated sewer flows of the customer (determined from a sewer analysis) and the following formula:

$$SDC = ADWF \text{ of customer (in gpd)} \times \text{system unit cost (\$/gpd)}$$

Where:

ADWF of customer = 12-month average annual sewer flow.

System unit cost (\\$/gpd of ADWF) = \$28.96, (as adjusted in the future for inflation adjustments and changes to the SDC project list).

SDC Schedule

The SDC for each development type is determined by multiplying the systemwide unit cost of \$28.96 by the service requirement per unit for each SDC category as presented in Tables 2-4 through 2-5. Table A-1 in Appendix A provides the SDC schedule for each category based on the FY2023-2024 SDC unit cost.

Future Modification to SDCs

Modifications to SDC Assumptions

Through calibration of sanitary flow estimates for SDC categories to the ADWF and EDU assumptions used for determination of the FY2023-2024 sewer SDC unit cost per EDU, 2014 Collection System Master Plan assumptions are applied consistently in the SDC methodology to the determination of the cost basis, unit cost, and service requirements estimates by SDC category.

The City is currently in the process of developing a new collection system master plan that will likely result in modification to projected sanitary sewer flows overall (used to determine the project list and updated SDC unit cost) and residential flows specifically, reflecting reduced base flows from customers apparent in more recent water use data. Future update of flow assumptions should be applied holistically to various elements of the SDC calculations in order to maintain the financial integrity of the calculations.

Alternative SDC Calculations

The sewer SDC categories are intended to broadly capture the types of development projects in Bend. However, there will likely be instances where a development does not fit an established category, even with the broad definitions included in Appendix A. In those cases, the City will either determine the most applicable category for the use or a developer may elect to submit a sewer use analysis consistent with the parameters outlined in the Bend Municipal Code. The option to perform a separate sewer analysis only applies if the development does not fit the broad definition of an established category on the adopted SDC schedule.

¹⁷ For example, *Commercial and Institutional End Uses of Water* (AWWA Research Foundation, 2000), which found efficiency benchmark range of 3-15 gpd per student per school day, excluding irrigation and cooling water use. See Appendix C for benchmark information.

Future Project List and Inflationary Adjustments

As allowed by SDC Statutes, the City may annually update the SDCs adopted by resolution based on application of an independent cost index and may apply the independent cost index to capture increased costs between the date of the last inflationary adjustment of the fee schedule. The City will use information published by the Engineering News Record (ENR) Construction Cost index for Seattle to determine the annual inflationary adjustment, or other index identified in the Bend Municipal Code.

Furthermore, as provided in ORS 223.309, the City may modify the project list at any time. If a change in the project list will result in an increase to the SDCs, the City must also provide notification and review opportunities for the updated SDC schedule and project list.

Future inflationary adjustments, and updates to the SDC project list that do not result in an increase to the SDC schedule, do not require revision to this methodology report.



Appendix A – Sewer SDC Schedule

Table A-1. SDC Schedule

Categories	Unit of Measure	SDC \$/Unit
<i>Residential Categories</i>		
Single Unit & Middle Housing		
<i>Average</i>		\$5,791
Tier 1 <600 SQ FT	Dwelling Unit	\$3,207
Tier 2 (601-1200 SQ FT)	Dwelling Unit	\$5,128
Tier 3 (1201-1600 SQ FT)	Dwelling Unit	\$5,584
Tier 4 (1601-2200 SQ FT)	Dwelling Unit	\$5,779
Tier 5 (2201-3000 SQ FT)	Dwelling Unit	\$6,107
Tier 6 (>3001 SQ FT)	Dwelling Unit	\$6,683
Multi-Unit Housing		
Housing >4 units	Dwelling Unit	\$4,621
Manufactured Dwelling Park, per pad	Dwelling Unit/Pad	\$5,005
Micro-Units/Single Occupancy	Dwelling Unit	\$2,821
Dormitories	Room	\$2,821
Attached Sr. Housing (55+ restricted, no care)	Dwelling Unit	\$3,093
Other Housing		
Continuing Care Facility	Units	\$3,475
Accessory Dwelling Unit	Dwelling Unit	na
<i>Nonresidential Categories</i>		
Standard Categories		
Industrial/Manufacturing ^{a b}	1,000 SQ FT	\$2,027
Warehouse/ Storage/ Dist. Center	1,000 SQ FT	\$1,100
Movie Theater	1,000 SQ FT	\$3,215
Indoor Fitness & Recreation	1,000 SQ FT	\$6,835
Church/ Religious Organization	1,000 SQ FT	\$1,796
Hospital	1,000 SQ FT	\$7,240
Medical - Dental - Vet Office	1,000 SQ FT	\$4,460
General Office	1,000 SQ FT	\$2,664
Stand-Alone Retail/Services with >50% Floor Area Warehouse/Storage ^c	1,000 SQ FT	\$1,129
Stand-Alone Retail/Services	1,000 SQ FT	\$2,346
Integrated Retail/Services ^d	1,000 SQ FT	\$3,736
Super Store (with or w/out membership & discount) ^b	1,000 SQ FT	\$2,606
Car Sales ^b	1,000 SQ FT	\$2,201
Supermarket ^b	1,000 SQ FT	\$4,894
Convenience Store ^b	1,000 SQ FT	\$3,186

Categories	Unit of Measure	SDC \$/Unit
Furniture Store	1,000 SQ FT	\$1,129
Bank/Financial Institution	1,000 SQ FT	\$2,577
Restaurant (Table Service)	1,000 SQ FT	\$12,771
Quick Service Restaurant ^b	1,000 SQ FT	\$12,771
Special Unit Categories		
Public Parks, Private/Public Golf Course, Common Areas ^b		na
Community Space	1,000 SQ FT	\$1,800
Golf Course Club House	1,000 SQ FT	\$3,264
Restroom	Each	\$7,240
Outdoor Pool	1,000 SQ FT Surface Area	\$4,025
Childcare (presently exempted in methodologies)	Child	\$145
School K-12	Student	\$261
College/University	Student	\$434
Gas Sales/Service Station ^b	Fuel or Service Position or Site	\$13,032
Manual Car Wash ^b	Bay	\$8,688
Automated Car Wash ^b	Bay	\$107,152
Hotel/Motel/RV Park ^b	Room or Space	\$2,635
RV Dump Station (for Park)	Unserviced Space	\$1,448
RV Dump Station (for Public)	Each	\$14,480

na=not applicable

NOTE: See accompanying category definitions; controlling definitions are found in the City's adopted fee resolution.

^a"Wet" industry required to prepare individual water and sewer analysis.

^b Individual category rate applies even if part of an Integrated Retail/Services development. Only Quick Service Restaurants with a drive-thru will be charged individual category rates, even if included in an integrated development.

^c If stored products require water for growing, cleaning, etc., Stand-Alone Retail/Services rates for water and sewer apply.

^d Integrated development is defined as a development that is planned or developed as a unit with features such as shared parking or access. See full definition in category descriptions.

"Wet" Industrial User SDC Schedule

	Units	Sewer \$/Unit
Industrial/Manufacturing	GPD water use	\$28.96

SDC Category Definitions and Examples

Table A-2. SDC Category Definitions and Examples

Category ^a	Definition/Example Development Types ^a
Residential Categories	
Single Unit & Middle Housing	Single unit housing with up to 4 units on one lot or parcel. Includes middle housing (duplexes, triplexes, quadplexes, cottage developments up to 4 units on one lot or parcel, and townhouses) and up to three (3) manufactured homes on a single lot. Units can be attached or detached. Applies to residential units in a mixed-use development with up to 4 units.
Multi-Unit Housing	Includes multi-unit housing that is part of a mixed-use development.
Housing >4 units	Five or more dwellings on an individual lot or parcel (e.g., multi-plexes, apartments, condominiums, etc.). Units can be attached or detached.
Manufactured Dwelling Park	Manufactured dwelling park as defined in Bend Development Code (four or more pads for manufactured dwellings located on a lot, tract, or parcel of land under the same ownership). Manufactured dwelling means a residential trailer, mobile home, or manufactured home; see BDC definition.
Micro-Units/Single Occupancy	Generally, consists of one room used for living and sleeping purposes and includes permanent provisions for sanitation but does not include a kitchen. See BDC definitions.
Dormitories	On-campus housing for students.
Sr. Housing	Age-restricted (55+) attached housing without on-site care facilities.
Other Housing	
Continuing Care Facility	Nursing home, residential care facility, adult family housing, hospice care, assisted living, rest home, convalescent home, sobering center with overnight beds, congregate or continuing care facility.
Accessory Dwelling Unit	A small, secondary dwelling unit on a lot or parcel with a single-unit dwelling unit as a primary use.

Category ^a	Definition/Example Development Types ^a
Nonresidential Category	
Standard Categories	
Industrial / Manufacturing	May include a mix of manufacturing, service, office, research, lab, and warehouse functions. Many produce goods by assembling other products, such as assembly of computers or other electronics. May be used for research and development projects that are a combination office and lab, where lab is the predominant (>50%) square footage of the combined development area. For purpose of water and sewer SDCs, excludes 'Wet' Industries that use water in the production process (see separate SDC category and definition).
"Wet" Industrial	Users in this category use water during the production process for either creating their products or cooling equipment. Industrial water may also be used for fabricating, processing, washing, diluting, cooling, or transporting a product. Water is also used by industries producing chemicals, food, and beverage products. Breweries, distilleries, and data centers are examples of these types of customers. Water and sewer use and applicable SDC shall be determined through a water and sewer analysis, as defined in the City Code.
Warehouse / Storage / Dist. Center	Warehouse, storage, and high cube fulfillment centers. Self or mini storage. Stand-Alone Retail/Services water and sewer rates apply if stored products require water for growing, cleaning, etc.
Movie Theater	Audience seating, with one or more screens, and a lobby and refreshment stand.
Indoor Fitness & Recreation	Public or privately owned fitness or recreation facilities that may include indoor/outdoor pools, saunas, gyms, classes, courts or specialized passive or active recreation facilities. Features space for exercise, sports, and recreation, as well as a broader range of services such as eating/drinking, preschools/day care and meeting rooms.
Church, Religious Organization	Worship facilities may include assembly hall or sanctuary, meeting rooms, classrooms, and occasionally dining facilities.
Hospital	Buildings on a shared campus with medical, surgical diagnosis, treatment, imaging, labs, and other services, and provide overnight beds for persons under the care of doctors and nurses.
Medical - Dental - Vet Office	A facility that provides diagnoses and outpatient care on a routine basis but does not provide prolonged in-house medical/surgical care. May be operated by either a single private physician/dentist/practitioner or a group. Includes vet offices as well as chiropractic and other treatment modalities, mental health professionals, etc. May be connected to other uses (except hospitals) or stand-alone. If this use is part of an Integrated Retail/Services development, this individual land use rate only applies if medical/dental/vet office is the principal use. If located within a hospital campus, the Hospital Rate for transportation applies. If located in the Medical Overlay District, as defined in BDC Chapter 2.7 Article IV, Medical Overlay District SDC is reduced by 24% based on ITE 720 w/in or near hospital campus.

Category ^a	Definition/Example Development Types ^a
General Office	An administrative office building houses one or more tenants and is the location where affairs of a business, commercial or industrial organization, professional person or firm are conducted. The building or buildings may be limited to one tenant, either the owner or lessee, or contain a mixture of tenants including professional services, insurance companies, investment brokers, and company headquarters. May include onsite daycare or food service facilities provided for tenants. Also includes libraries and research & development projects that may be a combination of office and research lab facilities, when the lab is secondary use (i.e., <50% of building square feet). If part of Integrated Retail/Services development, individual land use rate only applies if the primary use.
Medical Overlay District	The Medical Overlay District as defined in BDC Chapter 2.7 Article IV. Transportation SDCs in this District charged based on ITE 720 w/in or near hospital campus rate.
Medical Dental Office w/in Hospital Campus	Hospital transportation rate applies for Medical-Dental office located within a hospital campus.
Stand-Alone Retail/Services with >50% Floor Area Warehouse/Storage	Stand-Alone retail uses with floor area greater than 50% for warehouse/storage. If stored products require water for growing, cleaning, etc., Stand-Alone Retail/Services rates for water and sewer apply.
Stand-Alone Retail/Services	Includes general merchandise and services categories not otherwise listed in the SDC schedule. Transportation rate is based on size of development as listed in the SDC Schedule. Stand-alone rate for sewer and water applies to Stand-alone Retail/Services that are not integrated (see "integrated" definition below).
Integrated Retail/Services	An integrated development is planned or developed as a unit with features such as shared parking or access, like single development with multiple storefronts or office spaces, strip mall, mixed use building with residential and commercial spaces, etc. Integrated developments are charged the Integrated rate for water and sewer, except as described in the following sentences. Transportation rate is based on the square footage of the development, using the Retail/Services rate. The following uses will be charged transportation, water, and sewer rates based on their individual category rates even if included in an integrated development: Hotels, Parks, Super Store, Supermarket, Quick-Service Restaurants w/drive-thru, Car Washes, Gas Sales/Service Stations, Industrial/Manufacturing, 'Wet' Industrial, and Car Sales. Where an integrated development has a principal use (as defined in the BDC), the water, sewer & transportation rate of the category for that use will apply to the square footage of the principal use, and the integrated rate for water and sewer will apply to the square footage of all uses other than the primary use; transportation rate will be based on the square footage of all uses other than the primary use. For building that is mixed commercial and residential uses, integrated rate applies to the commercial square footage and applicable residential rate based on number of units applies to residential space.
Super Store (with or w/out membership & discount)	Store includes a variety of services or departments including a full-service grocery department; has centralized cashiers and may have garden center or pharmacy. May or may not be part of shopping center or require membership. Examples include Costco, Walmart, Fred Meyer, etc. Additional retail pads within the development will be charged at the Integrated Retail/Services rate. When a development includes a super store and a gas station and/or service station, the super store and gas station/service station will be charged as separate uses, with the latter charged the gas sales/service station rate.

Category^a	Definition/Example Development Types^a
Supermarket	A store that sells an assortment of food, beverage, household products and other related items. Some include limited banks, bakeries, dry cleaning, and floral services. This category also includes discount grocery stores, but not “super” stores. When a development includes a supermarket and a gas station and/or service station, the supermarket and gas station/service station will be charged as separate uses, with the latter charged the gas sales/service station rate.
Convenience Store	A small retail store that sells limited grocery, beverages, coffee, pre-made and some made to order foods, snacks, alcohol, over the counter drugs and toiletries. Some have limited seating.
Furniture Store	A store that sells primarily pre-assembled furniture and carpeting. Some have large showrooms and most of the goods must be ordered for delivery.
Car Sales	New and used automobile dealerships may include auto services and parts sales, includes vehicles for sale or lease.
Bank/Financial Institution	A building, with or without a drive-up window, for the custody or exchange of money, and for facilitating the transmission of funds. Walk in and drive through. If part of integrated retail/services development, individual land use rate only applies if the principal use.
Restaurant (Table Service)	An eating and/or drinking establishment (including brewery taproom or winetasting room) that prepares food or beverages on-site and offers accommodation for consuming the food or beverage on the premises. Usually serves breakfast, lunch, and/or dinner; generally, does not have a drive-up window. Fees apply to restaurants that are not incidental to shopping centers or hotels. This category does not apply to a bottle shop that primarily sells closed bottles and is not connected to a brewery or winery unless service includes a kitchen and table service for prepared food.
Quick (Counter) Service Restaurant	Quick food service and a limited menu of items. Food is generally served in disposable wrappings or containers and may be consumed inside or outside the restaurant building or food truck. Restaurants in this category may or may not have a drive-up window. Fees apply to restaurants/food trucks that have drive-thru lanes or are not incidental to shopping centers or hotels.
Special Categories	
Public Parks, Private/Public Golf Course, Common Areas	Developed parks owned and operated by public agencies, public and private golf courses. Common area examples include restrooms, picnic table areas and other gathering spaces. Sites may include a variety of recreation amenities, including boating or outdoor swimming facilities, splash pads, sport fields, playgrounds, and picnic facilities. A developed park includes at least one built amenity that provides a park experience beyond open space. Land preserved for natural areas, trails and trailheads are not considered developed parks for SDC purposes and will be excluded from acreage measurements used as the basis for transportation SDCs; irrigation rate may apply to developed or natural areas if irrigated. When a park includes a recreation center, the park and recreation center will be charged as separate uses, with the latter charged the Indoor Fitness & Recreation rate. Water and sewer SDCs for parks will be charged according to the irrigation and park facility categories (e.g., Stand-Alone Restroom and Outdoor Pool).

Category^a	Definition/Example Development Types^a
Community space	Structures for gathering with a Homeowner's Association or access limited to neighborhood residents. Applies to water and sewer SDCs only.
Golf Course Club House	Golf course pro shop or club house. Applies to water and sewer SDCs only.
Restroom (Stand-Alone)	Stand-alone public restroom facilities. Applies to water and sewer SDCs only. Separate water SDC does not apply if served by a meter used for irrigation and restroom is incidental to irrigation use.
Outdoor Pool (Public)	Outdoor public pools that are not part of an recreation or fitness center. Applies to water and sewer SDCs only.
Separate Irrigation Space >1/4 acre	Irrigation uses that exceed ¼ acre and that are served by a meter that serves both the irrigation use and other (e.g., indoor) water uses. When other water uses serve buildings that are more than an incidental use (e.g., school or office buildings), the irrigation portion of the SDC will be determined based on the meter size that would be required if the irrigation space were served by a stand-alone meter. Applies to water SDCs only.
Stand-Alone Irrigation	A water meter installed with irrigation as the primary use. May also serve a restroom or other incidental use if irrigation is the principal use. Applies to water SDCs only.
Childcare	Daycare and childcare facilities. Childcare facilities that are incidental to other categories (e.g., Indoor Fitness and Recreation, General Office, etc.) or are within Integrated Retail/Services developments and not the primary use will be charged those other category rates.
School K-12	Includes public and private primary and secondary schools (e.g., elementary, junior high, middle school and high school) instructional classrooms, offices, cafeterias, and gymnasiums. For water SDCs, a separate irrigation SDC based on meter size applies for outdoor sports fields and irrigation uses greater than ¼ acre or served by a stand-alone meter.
College/University	Facilities of higher education include two-year, technical, four-year, and graduate-level institutions. Category includes instructional classrooms, offices, cafeterias, and gymnasiums. For water SDCs, a separate irrigation SDC based on meter size applies for outdoor sports fields and irrigation uses greater than ¼ acre or served by a stand-alone meter.
Gas Sales/Service Station	A facility used for the sale of gasoline or service station that provides short duration, high-turnover auto services such as oil changes, etc. May include areas for servicing or repairing vehicles. May include minimart and/or carwash. Minimarts without fueling/service positions fall under the Convenience Store rate. Other auto repair falls under Integrated and Stand-Alone Retail/Services. Water and sewer SDCs assessed per site; transportation SDCs are assessed per fueling/service positions (per ITE definitions) Car washes on the site will be assessed additional water and sewer SDCs based on the type of car wash (see SDC schedule).
Car Wash	Manual operations where the driver parks and washes the vehicle in a stall, or an automated facility for the same purpose will be charged the same for transportation SDCs. Refer to SDC schedule for water and sewer rates for manual vs. automated car washes.

Category ^a	Definition/Example Development Types ^a
Hotel/Motel/RV Park	Includes hotel/motel and other overnight facilities primarily intended for transient stays. May include on-site restaurants (or food truck pads), drinking place/bar, meeting and banquet rooms or convention facilities as well as swimming pools and fitness. For water and sewer SDCs, applies to RV park spaces with individual water and sewer service connections. If individual spaces do not have sewer hookups, then use RV dump station rate for sewer portion.
RV Dump Station (For Park)	Facilities for disposal of black water and gray water from RV holding tanks at RV parks and campgrounds not served by individual services at each space. Applies to sewer SDCs only. Will be assessed based on number of spaces without individual connections.
Sewage Dump Station (Open to Public)	Facilities for disposal of black water and gray water from RV holding tanks at gas stations or other sites. Applies to sewer SDCs only.
Urban Rate	30% reduction in applicable transportation SDC for uses in areas identified on the Urban Rate Area map adopted by City Council in the Fee Resolution. To qualify, the development must be in one of these areas, at least three stories high, the first floor must be “commercial ready” as defined in BDC Section 2.7.3245.A. 1., 2., and 3. Rate is not available for development that includes any auto-dependent or auto-oriented uses (as defined in the BDC) or for single-unit or middle housing residential uses. Multi-unit residential does qualify if it meets the other criteria.

^a Where there is a conflict between definitions, definitions in Bend Development Code control.



Appendix B – Exemptions for Certain Developments

Beyond methodological incentives, the City is considering policy-based incentives that reduce or exempt SDCs for certain development types. As policy-based incentives are outside of the methodology and no level of development of any particular use is guaranteed or known, any potential fee reductions are not offset by increases in SDCs for other development. However, the Bend Municipal Code specifies when credit for existing exempt uses will and will not be available. By not giving credit for exempted SDCs for existing or prior uses, revenue will be received on some redevelopment to non-exempt uses.

Policy-based incentives are generally reserved for development that may not be feasible in sufficient quantity to meet City goals, without more significant measures to reduce development costs.

History

Beginning in 2015, the City has exempted certain affordable housing developments from payment of sewer, water, and transportation SDCs.

Ordinance NS-2247 (2015): adopted affordable housing exemption for up to \$1 million in exemptions for projects reviewed and recommended by the City's Affordable Housing Advisory Committee, requiring repayment if affordable housing use ceased within 5 years from project completion.

Ordinance NS 2298 (2017): established sunset and automatic repeal of affordable housing exemption January 1, 2023; removed \$1 million cap.

Ordinance NS-2457 (2022): extended sunset to December 31, 2024, to allow time for SDC methodology development, and added requirement for repayment if affordable housing use ceased within 20 years from project completion.

SDC exemptions have been available for the following types of development:

1. Rental housing that is affordable for households with an income at or below 80 percent of the area median income ("AMI") as determined by the State Housing Council based on information from the United States Department of Housing and Urban Development.
2. Owner-occupied or lease-to-purchase housing for households with an income at or below 80 percent of the AMI as determined by the State Housing Council based on information from the United States Department of Housing and Urban Development.
3. Homeless shelter developments.

Following the changes in 2022 that required a 20-year deed restriction, the State of Oregon adopted so-called "super-siting" authority allowing a greater number and type of homeless shelter developments to develop and operate throughout the state, including in Bend. This resulted in shelters opening that are operating on short-term leases and are unable to record a

20-year deed restriction. Some of these shelter operations were determined by the City not to increase demand on certain systems, and thus did not justify charging certain SDCs.

Additionally, beginning in 2018, the City exempted childcare facilities from transportation SDCs.

Ordinance NS-2322 (2018): 70% exemption for transportation SDCs, sunset and automatic repeal on December 31, 2020

Ordinance NS-2393 (2020): Increased to exemption of 100% of transportation SDCs, extended sunset to December 31, 2022

Ordinance NS-2457 (2022): extended sunset to December 31, 2024, to allow time for SDC methodology development.

Because ORS 223.297 establishes that the purpose of SDCs, “ORS 223.297 to 223.316, is to provide a uniform framework for the imposition of system development charges by local governments,” the City now wishes to include these exemptions from SDC charges for certain development types in the methodology, to provide consistency and uniformity in application of the methodology. Future changes to the uses that are exempt will require a change to this methodology appendix and required publication before the first hearing on the change.

Exempt Uses

The following development types are exempt from payment of 100% of SDCs, subject to recording of deed restrictions and repayment as provided in the Bend Municipal Code:

1. Rental housing that is affordable for households with an income at or below 80 percent of the area median income (“AMI”) as determined by the State Housing Council based on information from the United States Department of Housing and Urban Development.
2. Owner-occupied or lease-to-purchase housing for households with an income at or below 80 percent of the AMI as determined by the State Housing Council based on information from the United States Department of Housing and Urban Development.
3. Homeless shelters, providing shelter on a temporary basis, and other accessory services, for individuals and families who lack permanent housing.
4. Childcare facilities, as defined in the Bend Development Code

SDCs may be payable on conversion or redevelopment of an exempt use to a non-exempt use, as provided in the Bend Code and depending on the type of deed restriction recorded for the exempt use.



Appendix C – Benchmark Data

Table C-1. Nonresidential Water and Sewer Service Requirements per Unit (GPD)

SDC Category	Avg. Summer GPD/ Unit ¹	Est. MDD GPD/ Unit ²	Est. GPD ADWF ³	MWMC (OR) ⁴	Ventura (CA) ⁵	WES (OR) ⁶	LA County Sanitation District (CA) ⁷	Miami Dade County (FL) ⁸	Monterey (CA) ⁹	AWWA ¹⁰	WRF ¹¹	State Agency ¹²
Based on 1,000 SQ FT												
Industrial/Manufacturing	95	113	70	68-137	60	--	--	--	--	134	--	--
Warehouse/ Storage/ Dist. Center	65	78	38	41-68	--	17	25	15-20	62	140	--	30
Movie Theater	196	233	111	160	--	66	125	--	--	--	--	--
Indoor Fitness & Recreation	419	499	236	219	213	131	300-600	100-200	--	--	--	500
Church/Religious Org.	120	143	62	68	92	33	50	100	62	75	42	--
Hospital	346	413	250	205	--	--	300	--	--	--	218	--
Medical - Dental - Vet Office	268	320	154	239	168	--	300	200	--	143	169	--
General Office	177	211	92	137	38	66	200	50	250	176	69	90
Stand-Alone Retail/Services	138	164	81	55-137	105	66	100	25-100	--	--	125	130-180
Integrated Retail/Services	210	250	129	137	155	--	150-325	100	--	--	143	--
Super store (with or w/out membership and discount)	151	180	90	--	--	--	--	--	--	--	--	--
Car Sales	117	139	76	68	105	66	100	100	--	--	203	--
Supermarket	217	259	169	246	156	--	150	--	--	--	161	--
Convenience Store	153	183	110	246	--	--	100	--	--	--	--	--
Furniture Store	66	79	39	41	--	--	--	--	--	--	--	--
Bank/Financial Institution	152	181	89	150	105	66	100	100	62	461	99	--
Restaurant (Table Service)	653	778	441	683	673	554	1,000	1,000	--	677	494	--

SDC Category	Avg. Summer GPD/ Unit ¹	Est. MDD GPD/ Unit ²	Est. GPD ADWF ³	MWMC (OR) ⁴	Ventura (CA) ⁵	WES (OR) ⁶	LA County Sanitation District (CA) ⁷	Miami Dade County (FL) ⁸	Monterey (CA) ⁹	AWWA ¹⁰	WRF ¹¹	State Agency ¹²
Quick Service Restaurant	653	778	441	410	870	554	1,000	650	--	707	415	--
Community space	120	143	62	68	92	33	50	100	--	75	42	--
Club House	167	200	113	--	--	--	100	200	--	--	--	--
Pool (1,000 SQ FT surface area)	251	299	139	--	--	--	--	--	179	--	--	100
Units of Measure Vary												
Park Restroom (per facility)	451	508	250	--	--	250	--	--	--	--	--	250(i)
Day Care (Per Child)	5	6	5	--	--	4	--	--	--	--	8(ii)	5-10(ii)
Schools K-12 (per Student)	9	11	9	--	20	9	--	--	--	--	9-11(i)	3-15(iii)
Colleges/Universities (Per Student)	15	18	15	--	--	9	--	--	--	--	--	10-25
Gas Sales (per Site)	450	476	450	--	--	--	--	450	--	--	500	500
Manual Car Wash (Per Bay)	300	317	300	--	--	299	700	350	--	--	1,200	1,200
Automated Car Wash (Per Bay)	3,700	3,915	3,700	--	--	3,989	3,700	1300-5500	--	--	1,200	1,200
Hotel/Motel/RV Park (per Room/Space)	135	161	91	--	134-172	125	125	115	--	109	109	100-175
RV Park Dump Station (per Unserved Space)	--	--	50	--	--	--	--	--	57	--	--	50
Public RV Dump Station (Per Station)	--	--	500	--	--	--	--	--	--	--	--	--
Continuing Care (per Bed)	--	--	131	--	91	125	--	100	92	--	97-109	120-125

GPD = Gallons Per Day, MDD = Maximum Day Demand, ADWF = Average Dry Weather Flow, RV = Recreational Vehicle

Notes:

¹For categories estimated based on billing data, reflects average water use during peak two months summer.

²Adjusted for water losses and peak day to peak month factor.

³Based on sample of existing City of Bend utility customers for available categories. Represents average water use during winter quarter months (Dec - Feb).

⁴Metropolitan Wastewater Management Commission (Eugene/Springfield) System Development Charge Methodology (June 2009)

⁵Gustorf, Kevin J., *Ventura Water Final Water Demand Factor Study*, April 2020

⁶Water Environment Services, "Rules and Regulations", April 2023

⁷Los Angeles County Sanitation District NO. 1, "Service Charge Report for Fiscal Year 2023-24"

⁸Miami-Dade County Code 24-43.1 Liquid waste disposal and potable water supply systems.

⁹Monterey Peninsula Water Management District, Rule 24 "Calculation of Water Use Capacity and Capacity Fees"

¹⁰Morales, M, Heaney, J., Friedman, R., Martin, J. "Estimating Commercial, Industrial, and Institutional Water Use on the basis of Heated Building Area", Journal AWWA, June 2011

¹¹Water Research Foundation (WRF) Publications:

i) Fedak, R., Hannon, D., Taylor, Z., Volckens, A, *Developing Water Use Metrics for Commercial and Institutional Sector*, Water Research Foundation, Project 4619A, 2019 Note: based on indoor water use only (excludes cooling and irrigation).

ii) Kiefer, Jack C., and Krentz, Lisa R., *Methodology for Evaluating Water Use in Commercial, Institutional, and Industrial Sectors*, Water Research Foundation, Austin Water Utility, and US Environmental Protection Agency.

¹²Agency sources:

North Carolina Admin. Code 02T .0114 – "Wastewater Design Flow Rates", effective 2018 (Fitness Centers, Retail/Services, Hotel/Motel, RV Park Dump Station, Continuing Care, Park Restrooms)

i) Design Guidelines for Wastewater Facilities", Maryland Department of the Environment, 2013 (Retail/Services, General Office)

ii) "Washington Department of Health Water System Design Manual, Maximum Day Demand", June 2020 (used for outdoor pool and school K-12)

iii) California Revenue Program Guidelines: Gas Sales and wastewater flows from K-12 schools (10-20 gpd on a student +staff basis) and daycare (5-10 gpd water use based on student +staff basis). Also, college/university information is based on 75 gpd from boarding school category.



Accommodation Information for People with Disabilities

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