

Methodology Report

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# Local Wastewater System Development Charges

Prepared For  
City of Springfield



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# Introduction

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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 local wastewater SDCs for the City of Springfield (the City), in accordance with state law.

## 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] 223.297-223.314), 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 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. 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 development. 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). However, when such a fee is developed, the methodology must demonstrate that the charge is not based on providing the same system capacity.

## Credits

The legislation requires that a credit be provided against the improvement fee for the construction of “qualified public improvements.” 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. 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. As such, the local government is not required to adhere to the notification provisions. Adjustments to the SDC rate, which do not constitute a change in the methodology, are 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 with improvement fee revenues and the estimated timing, cost, and eligible portion of each improvement. The list may be updated at any time. However,

the City must comply with specific notification requirements (30 day notice) if the SDC is to be increased based on the revised project list.

- 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 provisions of the legislation are invalidated if they are construed to impair the local government's bond obligations or the ability of the local government to issue new bonds or other financing.

# Local Wastewater SDC Methodology

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The proposed SDC methodology is based on a combined reimbursement and improvement structure, and consists of the following elements:

- Determine capacity needs
- Develop cost basis
- Develop SDC schedule

Each element of the methodology is discussed below.

## Determine Capacity Needs

The 2008 Wastewater Master Plan (CH2M HILL, June 2008) is the source of information related to future capacity needs and improvements. Based on future population growth and land use conditions, wastewater flows are projected. Flows are converted to equivalent dwelling units (EDUs) based on the typical dwelling unit flow contribution of 236 gallons per day (gpd).

The flow estimates contained in the Master Plan for existing and future conditions yield 36,902 and 51,642 EDUs respectively; therefore, growth in the system represents 14,740 EDUs (28.5 percent of future system EDUs).

## Develop Cost Basis

The reimbursement fee is intended to recover the costs associated with the available capacity in the existing system that will serve new development; 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, adjusted for assessments and other contributions, is referred to as the “cost basis”.

### Reimbursement Fee Cost Basis

#### System Valuation

The reimbursement fee calculation is based on the depreciated replacement cost of the existing system facilities. Estimating the depreciated replacement value begins with itemization of the existing system trunk sewers and pump stations. The City’s Geographic Information System (GIS) is used to identify the linear feet of sewers by size (measured by diameter) and the individual pump stations and their capacity.

Current construction unit costs, adjusted for engineering, legal, contingencies, and other mark-ups are then applied to each component of the asset inventory to determine the estimated replacement cost of the system. The City’s policy for assessing the 8-inch equivalent pipe cost to property owners is then applied to estimate the portion of pipe costs

funded through assessments. Under this policy, the entire cost of pipes that are 8-inches in diameter or smaller, are assessable to property owners. One exception is that the 2- and 3-inch pressure lines that connect pump stations to the gravity system were assumed to be funded 50 percent by the City and 50 percent by developers who paid for installation of some of the pump stations. For pipes between 8-inch and 16-inches in diameter, the cost of an 8-inch equivalent pipe is assumed to have been funded by assessments. For pipes between 16- and 24-inches in diameter, 50 percent of the 8-inch equivalent is subtracted, as assessments are not recovered from every parcel for these larger pipes. None of the costs for pipes larger than 24-inches are assumed assessable.

In addition to assessments, the City has also received grants and other funding contributions in the past to help pay for the cost of the system. These funds are also deducted from the replacement value for purposes of determining the SDC-eligible reimbursement cost, consistent with State law.

The final step in the reimbursement valuation process is adjustment of the replacement value to reflect accumulated depreciation of the assets in the system. The City's fixed asset records are used to estimate the accumulated depreciation percent, which is then deducted from the replacement cost.

### **Financing Adjustments**

The City has used some debt to finance local wastewater facilities. Outstanding debt principal is deducted from the existing system value, as it does not represent current equity in the system. However, existing users have paid interest costs on debt used to finance improvements which will help meet the needs of future growth. Therefore, historical financing costs are added to the system value, for purposes of developing the reimbursement fee.

### **Available Capacity Determination**

The existing system facilities - in conjunction with the planned improvements (which include upgrades to the existing system to address deficiencies and extend the system) will provide the needed capacity to serve existing and future development within the planning period. Therefore, the existing system costs are apportioned to existing and future system users, based on the relative contribution to the future system capacity requirements, as estimated by the number of EDUs. Based on the Master Plan, future growth is responsible for 28.5 percent of future EDUs, and is therefore allocated 28.5 percent of existing facility costs.

## **Improvement Fee Cost Basis**

### **Cost Allocations**

Each improvement in the Master Plan is reviewed to determine the portion of costs that expand capacity specifically for growth. The Master Plan identifies three types of projects:

1. Existing deficiencies
2. Future deficiencies, and
3. Future expansions

The majority of existing deficiency costs are the responsibility of existing development, as the projects are needed to restore capacity for existing users. However, if the costs include upsizing facilities to meet future growth needs, then that portion of costs are included in the improvement SDC cost basis. Costs are apportioned based on hydraulic modeling data that shows existing and future development flow contributions for planned pipe segments and pump stations.

Future deficiency projects also include an existing development cost component, assuming the existing facilities (which currently serve existing users) are also being replaced. Flow data from the hydraulic model is used in this case also to determine the cost allocations.

Future expansion costs are primarily growth-related, as these are new facilities needed to extend the system to newly developing areas. However, for these improvements, the City's assessment policy (described earlier) is applied in order to determine the SDC-eligible amount (i.e., estimated assessments are deducted from the growth cost to determine the SDC cost basis).

### **Financing Adjustments**

The City will likely use future debt to finance a portion of the planned improvements. At the time that financing costs are known for individual projects, the City will update the local wastewater project list and incorporate those costs into the construction costs of the improvements. At that time, the cost basis and SDCs will be updated.

## **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 stated in EDUs. The EDU rate is then scaled up or down for each development, based on the number of drainage fixture units (DFUs).

The cost per EDU is converted to a cost per DFU based on the average number of DFUs for a typical single family dwelling unit. A typical single family dwelling is assumed to have 20 DFUs, so the cost per EDU is divided by 20. The SDC for each development is estimated based on the cost per DFU and the specific number of DFUs for that development. The number of DFUs is a function of the fixture count for that development and DFU equivalencies for each fixture type identified in the State of Oregon Plumbing Specialty Code.

Table 1  
Existing Trunk System Inventory (May 2008)

Pipe Diameter	System Wide Quantity	Unit	Construction Unit Cost	Project Unit Cost (94% Mark-up)	Replacement Value	Assessable Cost	Grants and Other Contributions	SDC Eligible
2	1,135	Lineal Feet	\$152	\$295	\$334,689	\$167,344	\$0	\$167,344
3	600	Lineal Feet	\$152	\$295	\$176,928	\$88,464	\$0	\$88,464
4	3,398	Lineal Feet	\$152	\$295	\$1,002,002	\$1,002,002	\$0	\$0
5	2,186	Lineal Feet	\$152	\$295	\$644,608	\$644,608	\$0	\$0
6	83,154	Lineal Feet	\$152	\$295	\$24,520,472	\$24,520,472	\$0	\$0
8	834,045	Lineal Feet	\$173	\$336	\$279,922,304	\$279,922,304	\$0	\$0
9	60	Lineal Feet	\$180	\$349	\$20,952	\$10,380	\$0	\$10,572
10	83,343	Lineal Feet	\$186	\$361	\$30,073,477	\$14,418,334	\$0	\$15,655,143
12	50,443	Lineal Feet	\$212	\$411	\$20,746,156	\$8,726,622	\$0	\$12,019,534
15	28,771	Lineal Feet	\$229	\$444	\$12,781,804	\$4,977,383	\$0	\$7,804,421
18	28,949	Lineal Feet	\$252	\$489	\$14,152,587	\$2,504,089	\$0	\$11,648,499
20	1,973	Lineal Feet	\$271	\$526	\$1,037,285	\$170,665	\$0	\$866,621
21	13,933	Lineal Feet	\$271	\$526	\$7,325,135	\$1,205,205	\$116,189	\$6,003,742
24	27,041	Lineal Feet	\$287	\$557	\$15,055,665	\$2,339,012	\$2,691,475	\$10,025,179
27	24,952	Lineal Feet	\$360	\$698	\$17,426,477	\$0	\$0	\$17,426,477
30	12,117	Lineal Feet	\$460	\$892	\$10,813,211	\$0	\$1,574,194	\$9,239,017
36	6,764	Lineal Feet	\$590	\$1,145	\$7,742,074	\$0	\$6,129,333	\$1,612,741
42	21,075	Lineal Feet	\$710	\$1,377	\$29,028,705	\$0	\$0	\$29,028,705
48	28,564	Lineal Feet	\$830	\$1,610	\$45,993,753	\$0	\$8,791,692	\$37,202,061
60	5,379	Lineal Feet	\$948	\$1,839	\$9,892,626	\$0	\$0	\$9,892,626
<b>Total</b>	<b>1,257,882</b>				<b>\$528,690,911</b>	<b>\$340,696,882</b>	<b>\$19,302,882</b>	<b>\$168,691,148</b>

Note: Size and quantity of each pipe size derived from GIS and Hansen IMS, discounting MWMC pipes  
Note: per GIS, no pipes were built over 12" since 1999, except for 2,867 ft of 30"

Table 2  
Existing Pump Station Inventory (May 2008)

Location	Capacity	Unit	Replacement Value	Assessable Cost	Grants and Other Contributions	SDC Eligible
Harlow Road	10.0	mgd	\$4,000,000	\$0	\$0	\$4,000,000
*Gateway & Gamefarm Ramada	0.2	mgd	\$400,000	\$0	\$0	\$400,000
*Ken Ray	0.5	mgd	\$1,000,000	\$1,000,000	\$0	\$0
*21st & E St	1.6	mgd	\$3,200,000	\$0	\$0	\$3,200,000
*Hayden-Lo	0.4	mgd	\$800,000	\$800,000	\$0	\$0
*Marcola rd	0.1	mgd	\$200,000	\$200,000	\$0	\$0
*15th St	0.3	mgd	\$600,000	\$600,000	\$0	\$0
*49th St	0.5	mgd	\$1,000,000	\$1,000,000	\$0	\$0
*Golden Terrace	0.4	mgd	\$800,000	\$800,000	\$0	\$0
*Lucerne Meadows	0.3	mgd	\$600,000	\$600,000	\$0	\$0
*Commercial Park	0.4	mgd	\$800,000	\$800,000	\$0	\$0
*Olympic	0.2	mgd	\$400,000	\$400,000	\$0	\$0
*Deadmond Ferry	1.2	mgd	\$2,400,000	\$0	\$0	\$2,400,000
*Otto St	0.2	mgd	\$400,000	\$400,000	\$0	\$0
*42nd & Olympic	0.2	mgd	\$400,000	\$400,000	\$0	\$0
*River Glen	0.7	mgd	\$1,400,000	\$1,106,000	\$0	\$294,000
*Nugget Way	0.6	mgd	\$1,200,000	\$1,200,000	\$0	\$0
*Vera & 19th	0.46	mgd	\$920,000	\$0	\$0	\$920,000
*Jasper Meadows	160	gpm	\$228,800	\$228,800	\$0	\$0
<b>Total</b>			<b>\$20,748,800</b>	<b>\$9,534,800</b>	<b>\$0</b>	<b>\$11,214,000</b>

\*Note: use \$1,430/gpm or \$200,000/0.1 mgd)

Table 3  
*Reimbursement Cost Basis*

	<b>Total</b>	<b>Accumulated Depreciation</b>	<b>Cost Basis</b>
<b>SDC Eligible</b>			
Trunks	\$168,691,148	28%	\$121,872,495
Pump Stations	\$11,214,000	5%	\$10,660,446
<b>Total</b>	<b>\$179,905,148</b>	<b>74%</b>	<b>\$132,532,940</b>
<b>Financing Adjustments</b>			
Outstanding principal			(\$1,194,000)
Historical interest			\$1,261,394
<b>Adjusted Total</b>			<b>\$132,600,334</b>
<b>Growth</b>			
Capacity allocation			28.5%
Cost			\$37,847,661
EDUs			14,740
<b>Reimbursement Cost per EDU</b>			<b>\$2,567.68</b>

Table 4  
 Combined SDC

	Reimbursement	Improvement	Total
Cost Basis	\$37,847,661	\$12,090,223	\$49,937,884
Capacity (EDUs)	14,740	14,740	14,740
Unit Cost (\$/EDU)	\$2,567.68	\$820.23	\$3,387.92
DFUs per EDU	20	20	20
Cost per DFU	\$128.38	\$41.01	\$169.40