
City of Springfield

System Development Charge Methodology

**Stormwater
Local Wastewater
Transportation**

Prepared By
City of Springfield

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OVERVIEW OF SYSTEM DEVELOPMENT CHARGES

One of the principal sources of revenue for financing new public facilities or expansions to existing facilities is a one-time charge imposed at the time of connection to the system. This charge is generally referred to as a system development charge (SDC), impact fee, or capital contribution fee. These charges are designed to pay for, or recover, all, or a portion, of the capital investment made by a local government to provide sufficient capacity in public infrastructure to serve new users. System development charges are typically collected when new users or developers connect to a utility system, when new development permits are issued, or when users change the usage of their property.

Oregon SDC Legislation

In Oregon, the development and implementation of SDCs is regulated by ORS 223.297-314. This legislation, which became effective on July 1, 1991, authorizes local governments to assess SDCs for the following types of capital improvements:

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

The City of Springfield has assessed and will continue to assess SDC charges for three of these systems (local wastewater collection and transmission, stormwater, and transportation) in compliance with the 1991 legislation. The City also currently collects SDC fees for Willamalane Park District and the Metropolitan Wastewater Management Commission for parks and regional wastewater conveyance and treatment facilities, respectively.

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

SDC Components

An SDC may be a reimbursement fee, an improvement fee, or a combination of the two.

Reimbursement Fee

The reimbursement fee is based on the costs of capital improvements already constructed or under construction. The legislation requires that the reimbursement fee be established by an ordinance or resolution that sets forth the methodology used to calculate the charge. This methodology must consider the cost of existing facilities, prior contributions by existing users, the value of unused capacity, ratemaking 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.

Improvement Fee

The improvement fee is designed to recover the costs of planned capital expansions. The improvement fee methodology must also be specified in an ordinance or resolution and must consider the costs of projected capital improvements needed to increase the capacity of the system. The legislation further requires that a credit be provided 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.

Revenues generated through the 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. The portion of such improvements funded by improvement fees must be related to current or projected development.

Combined Fee

The combined fee is simply the sum of the reimbursement and improvement fee.

Other Provisions

Other provisions of the legislation require:

- Development of a capital improvement program (CIP) or comparable plan that lists the improvements that may be funded with improvement fee revenues and the estimated timing and cost for each improvement.
- Deposit of SDC revenues into dedicated accounts and annual accounting of revenues and expenditures.
- Creation of an administrative appeal procedure whereby a citizen or other interested party may challenge an expenditure of SDC revenues.
- Preclusion against challenging the SDC methodology after 60 days from enactment of or revision to the SDC ordinance or resolution.

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.

SDC UPDATE - PROCESS OBJECTIVES

To assist in the SDC update process, the Springfield City Council created a citizen advisory committee (CAC) to advise staff and consultants on changes to the methodology, project list and related policy issues to be addressed during the update. The CAC identified the following key outcomes for the study process:

- Achieves fair, equitable, objective, defensible, and understandable methodology
- Provides adequate revenue for infrastructure related to capacity increases
- Creates incentives for downtown investment and revitalization

- Creates incentives for downtown restaurants and businesses to stay open in the evenings

The CAC met between January and October, 2000, and discussed each infrastructure system in detail, examining the methodology, project list and related policy issues. The following policy objectives were addressed in the update process:

- Consider a reimbursement component to the SDC
- Consider whether the transportation SDC should be based on peak traffic and effect on restaurants

In addition, administrative objectives were defined for the update process, including updating the project list to include Glenwood, utilizing unit costing, and establishing a long term financing program.

STORMWATER SDC

As amended... [STORMWATER SDC METHODOLOGY \(PDF\)](#)

LOCAL WASTEWATER SDC

As amended... [LOCAL WASTEWATER SDC METHODOLOGY \(PDF\)](#)

TRANSPORTATION

Introduction

The City's transportation SDC consists of a combined reimbursement and improvement fee. The improvement fee is calculated using a capital improvement plan (CIP) based approach. Under the CIP approach the SDC cost basis is derived from a capital improvement plan that identifies specific growth-related projects to be built in the future. The reimbursement fee is based on the value of available capacity in the existing system available to serve new development. The steps used in determining the transportation SDCs are as follows:

1. Determine the capacity needs of growth
2. Determine the SDC cost basis
3. Calculate the SDC unit cost
4. Develop the SDC schedule

Step 1 – Determine the Capacity Needs of Growth

For purposes of developing SDCs, the capacity of a transportation system is typically defined by the number of trip ends that may be accommodated by the system over a specified planning horizon. Every vehicle trip has two ends, an origin and a destination. Trip capacity may be stated in terms of average daily or peak rates of travel. Based on a recommendation from the Citizen Advisory Committee, Springfield's SDCs are calculated based on average weekday trip generation.

The Eugene/Springfield regional transportation system plan (*TransPlan*) identifies the transportation capacity needs of the region, as a whole and for the individual cities, through 2015. Based on *TransPlan*, the total average weekday trip ends generated by growth through 2015 is 196,077. Trip end forecasts generated by the regional transportation model rely heavily on regional household travel behavior surveys. Such surveys tend to account only for primary trip productions and attractions, and tend to omit short “pass-by” trips, diverted trips, and other linked trips. This is an important factor in how the SDCs are ultimately applied to individual land uses (see discussion under Step 4 below).

Step 2 – Determine the SDC Cost Basis

Reimbursement Fee

The SDC cost basis for the reimbursement fee is net system investment (system replacement cost net of assessments, grants and contributions, and outstanding debt principal), adjusted for the amount of available local capacity of the existing facilities. Table 10 shows calculation of the reimbursement fee cost basis. To develop the system replacement cost, a system inventory of improved minor arterials, improved collectors, off-street bike and pedestrian paths, and traffic signals was considered. The SDC cost basis does not include local streets and asphalt mat minor arterials and collectors because these are funded almost exclusively from assessments and developer contributions. Replacement unit costs, in \$/foot or \$/traffic signal, were estimated based on the City’s current road construction costs. The replacement cost was calculated by multiplying the inventory quantity by the unit cost, for each component of the transportation system inventory. Table 10 shows the replacement values for each type of asset in the current inventory. The total estimated replacement cost of the transportation system facilities is \$82,215,950.

TABLE 10
Transportation SDC Replacement Cost

Facility Category	Units (Feet or Number)	Unit Cost	Estimated Replacement Cost
Improved Minor Arterials	87,661	\$400	\$35,064,400
Improved Collectors	113,129	\$350	\$39,595,150
Off-Street Bike/ Pedestrian Paths	32,752	\$75	\$2,456,400
Traffic Signals	34	\$150,000	\$5,100,000
Total			\$82,215,950

SDCs are designed to recover the costs of general system facilities needed to provide additional capacity for new development. Assessments fund local improvements providing special benefits to individual properties, and are therefore deducted from the system value in determining the SDC cost basis. External contributions to the system in the form of developer contributions and grants are also deducted from the total system value to determine the cost basis. The assessable costs and external contributions were estimated based on a review of transportation system capital improvement financing since 1990. During this time, approximately 12.6% of funding for improved minor arterials and improved collectors was provided by assessments. Off-street bike and pedestrian paths were not funded by assessments and an estimated 20% of traffic signal funding was provided by developers. These percentages were applied to the respective replacement values to determine the total assessable cost of \$10,427,103.

Since 1990, approximately 66% of funding for improved minor arterials and improved collectors was provided by County, State, Federal or other grants. An estimated 80% of off-street bike and pedestrian path funding was from Federal grants, and grant funding was not received for traffic signals. These percentages were applied to the replacement values to determine the total grant/contribution cost of \$51,240,243.

Outstanding debt principal is also deducted from the system replacement value because the debt will be repaid through property taxes. Deducting the outstanding principal amount ensures that the value of the debt-financed improvements will not be double-charged – once through SDCs and again through property taxes charged to the same developments. In 2000, the City has outstanding a total of \$2,370,000 in general obligation debt related to the transportation system. The net system investment of \$18,178,424 is the replacement cost less assessments, grants and contributions, and outstanding debt principal.

The cost basis is equal to the net system value of local excess capacity. Based on traffic modeling data from TransPlan, the City estimated that approximately 19 percent of the existing transportation system capacity is available to growth through 2015. However, a portion of this capacity will be consumed by “through” trips. A through trip passes through the City but has neither an origin nor a destination in the City. Through trips require capacity, but this cost of capacity is not the responsibility of local new development. Therefore, the SDC cost basis excludes the value of through trip capacity. Through trips are estimated to account for less than 10 percent of the additional capacity needs through 2015.

The cost basis is determined by multiplying the percent available capacity in the existing transportation by the total replacement value net of assessments, contributions, and outstanding principal. The value of available capacity is \$3,484,804. An analysis of traffic modeling information indicates that 90.7% of the available capacity will be used by local trips, as opposed to through trips resulting in a cost basis of \$3,160,717. The SDC reimbursement fee cost basis is shown in Table 11.

TABLE 11
Transportation SDC Reimbursement Fee Cost Basis

Estimated Replacement Cost	\$82,215,950
Less Assessments	(\$10,427,103)
Less Grants	(\$51,240,423)
Less Outstanding Debt Principal	(\$2,370,000)
Net System Investment	\$18,178,424
% of System Capacity Available for Growth	19%
Value of Available Capacity	\$3,484,804
% Local Trip Ends	90.7%
Transportation SDC Cost Basis	\$3,160,717

Improvement Fee

The SDC improvement fee cost basis is the growth-allocable portion of planned transportation system capital improvements. Five classes of capital improvements are incorporated into the SDC: arterial capacity improvements, new arterial links and intersections, new collectors, urban standards, and bike projects. The source documents for the improvements include the following:

- *TransPlan update*
- Springfield Bicycle Plan
- Conceptual Road Network Map
- Refinement Plans

The total cost of planned capital improvements, in 2000 dollars, is \$84,553,349. As for the reimbursement fee cost basis, deductions are made for anticipated assessments, grants and other contributions. The level of funding from these non SDC-eligible sources was estimated based on a combination of past funding patterns and assumptions related to the availability of future grants, in particular Lane County grant funds. The two major sources of revenue for the county road fund are state highway trust funds and revenue from federal timber receipts. As timber receipts have become less stable and state highway funds have not been increased to keep up with inflation, the county does not expect to be able to continue to fund city projects at historical levels and have made this fact known to the cities. The portion of improvement costs to be funded through assessments, grants, and contributions is projected to be \$51,517,150.

For each improvement project, traffic modeling data was analyzed to determine how much of the project would be used by existing land uses versus new development through 2015. Traffic volume data is available for each road segment and intersection. Total traffic flows in 2015 were identified for each segment. Traffic flows from existing land uses on the 2015 network were subtracted from the total 2015 flow to determine the traffic volume generated by growth. The volume attributable to growth was then divided by the total estimated volume by segment to determine growth's share of each improvement. Table 12 shows the allocation of project types to growth. The total growth allocation is \$14,819,332.

TABLE 12
SDC Improvement Fee Growth Allocation

Project Type	Total Project Cost	Assessments and Other Funding	Net Project Cost	% Growth Allocable	Growth Allocation
Arterial Capacity Improvements	\$8,340,000	\$1,124,000	\$7,216,000	49%	\$3,516,297
New Arterial Link & Intersection	\$3,000,000	\$2,700,000	\$300,000	73%	\$217,500
New Collectors	\$44,978,500	\$33,100,650	\$11,877,850	65%	\$7,737,547
Urban Standards	\$21,490,000	\$9,712,500	\$11,777,500	24%	\$2,788,534
Bike Projects	\$6,744,849	\$4,880,000	\$1,864,849	30%	\$559,455
Total	\$84,553,349	\$51,517,150	\$33,036,199	45%	\$14,819,332

Similar to the reimbursement fee, the growth-allocable project cost is multiplied by the 90.7% local trip factor to account for the cost of capacity associated with through trips. The resulting SDC improvement fee cost basis is \$13,441,134

Step 3 – Calculate the SDC Unit Cost

Table 13 shows the calculation of the individual reimbursement and improvement fee unit costs, as well as the combined unit cost. The SDC reimbursement fee unit cost of \$16.12 per average weekday trip end is calculated by dividing the cost basis generated in Step 2 (\$3,160,717) by the number of average weekday trip ends generated by growth generated in Step 1 (196,077)

The SDC improvement fee unit cost of \$68.55 per average weekday trip end is calculated by dividing the cost basis generated in Step 2 (\$13,441,134) by the number of average weekday trip ends generated by growth generated in Step 1 (196,077). The combined SDC unit cost of \$84.67 per average weekday trip end is the sum of the reimbursement fee unit cost and the improvement fee unit cost.

TABLE 13
Transportation SDC Unit Cost

Reimbursement Fee Unit Cost	
Reimbursement fee cost basis	\$3,160,717
Average weekday trip ends generated by growth	196,077
Reimbursement fee unit cost	\$16.12
Improvement Fee Unit Cost	
Improvement fee cost basis	\$13,441,134
Average weekday trip ends generated by growth	196,077
Improvement fee unit cost	\$68.55
Transportation SDC Unit Cost	\$84.67

Step 4 – Develop the SDC Schedule

Transportation SDCs are charged based on the estimated impact of a particular development on the transportation system. Because transportation system capacity is measured in trip ends, the capacity requirements of new development are also stated in terms of trips generated. The number of trips generated differs by land use type. Therefore, SDC schedules assign different costs to a variety of land use types. The Institute of Transportation Engineers (ITE) Trip Generation Manual is the industry standard and most widely used source for information on trip generation by land use.

Adjustments for “Pass-by Trips”

Also referred to as *linked* trips or *trip chaining*, pass-by trips refer to trips that occur when a motorist is already on the roadway (as in the case of a traveler stopping by a fast food restaurant on the way home from work). In this case, the motorist making a stop while “passing by” is counted as a trip generated by the restaurant, but it doesn’t represent a new trip on the roadway. ITE trip generation rates include pass-by trips in the trip generation factors for individual land uses. However, as discussed under Step 1 above, the projections of trip ends from growth as a whole produced by the transportation model, do not include pass-by trips. Therefore, the Citizen Advisory Committee recommended adjusting ITE trip rates for pass-by trips so that the basis for charging SDCs for individual land uses is consistent with the development of the unit cost of capacity. Without an adjustment for pass-by trips, the City may over-collect SDC revenue.

The number of pass-by trips differs by land use. Retail establishments and fast food restaurants are generally among the land uses with the highest percent of pass-by trips

relative to total trips generated. Residential and office developments are among the land uses with the percentage of lowest pass-by trips.

The SDC schedule is calculated by multiplying the SDC unit cost by the number of average weekday trip ends calculated for a particular development. The number of trip ends is estimated for each development based on the trip rate for the particular land use, the size of the development, and the pass-by trip adjustment. ITE rates will generally be used and these are usually stated in terms of the number of trips per square feet, dwelling units, or other variables, depending on the land use. The City will consider other information regarding the trip rates for a particular development based on documentation developed and stamped by a professional traffic engineer, as provided by the developer.

Where available, the City will use the pass-by trip adjustments published in ITE trip rate tables, with supplemental information provided from other sources where applicable. The City will update the pass-by trip adjustment as information becomes available. The City will consider other information regarding the pass-by adjustment for a particular development based on documentation developed and stamped by a professional traffic engineer, as provided by the developer.

Table 14 provides example ITE trip rates and variables, and pass-by adjustments for some typical land uses in Springfield. This table is presented for example purposes only and actual rates and adjustments may change as further information is developed.

TABLE 14
Example ITE Trip Rates and Pass-By Adjustments

Development Type	Average Units (1)	Average Weekday Trip Ends/Unit	Pass-By Trip Adjustment (2)	Transportation SDC
Single-Family Dwelling Unit	1.0 Dwelling Unit	9.57	1.0	\$810
Supermarket	50 TGSF	111.51	0.64	\$302,130
Convenience Store	2 TGSF	737.99	0.39	\$48,739
Quality Restaurant	3 TGSF	89.95	0.56	\$12,795
Fast Food Restaurant With Drive Thru	2.5 TGSF	496.12	0.50	\$52,508
Hotel/Motel	80 Rooms	8.92	1.0	\$60,421
High School	1,000 Students	1.79	1.0	\$151,559
Church	5 TGSF	9.11	1.0	\$3,857
Office Building	150 TGSF	11.01	1.0	\$139,833
Service Station	12 Pumps	168.56	0.44	\$75,356
Drive-In Bank	2.5 TGSF	265.21	0.53	\$29,753

1 TGSF = thousand gross square feet

2 Source: ITE, except office building adjustment obtained from data used by the City of Salem.

Table 15 provides additional example SDC calculations for various land uses.

TABLE 15
Example Transportation SDC Calculations

Example Land Use (1)	Example Gross Square Feet or # of Dwelling Units	Average Weekday Trip Ends	Pass-By Trip Adjustment	Transportation SDC
Office	10 TGSF	11.01/TGSF	1.0	\$9,322
Restaurant	3 TGSF	89.95/TGSF	0.56	\$12,795
Retail	15 TGSF	40.67/TGSF	0.64	\$33,058
Apartment	20 Units	6.63/DU	1.0	\$11,227
Mixed Use (Sum of Above Four Examples)				\$66,402

1 Examples were selected based on review of development records in 1998 and 1999

Expenditures

The *Springfield System Development Charge Project List* identifies the projects which are eligible for funding through the transportation SDC. The SDC ordinance also provides flexibility to collect SDC revenue to be expended on projects identified in the City's long range plans.