RESOLUTION NO. 1134

A RESOLUTION AMENDING THE METHODOLOGIES AND FEES FOR SANITARY SEWER AND STORMWATER SYSTEM DEVELOPMENT CHARGES

WHEREAS, the Canby City Council has determined by Ordinance No. 867 that a charge shall be imposed upon new development for acquiring funds for capital improvements, and for reimbursement of constructed excess capacity to the City's sanitary sewer and stormwater system; and

WHEREAS, said Ordinance No. 867 provides that methodology and charges for capital acquisition, improvements, and reimbursements be established and amended by resolution; and

WHEREAS, ORS 310.145 requires that a governing body, when adopting or amending a fee resolution imposing new rates, may include a provision classifying said fees as subject to or not subject to the limitations set in Section 11 (b), Article XI of the Oregon Constitution; and

RESOLVED, that the following methodology for system development charges for the City of Canby, attached here to as Exhibit "A" and Exhibit "B" be adopted to amend the current sanitary sewer and stormwater system development charges effective immediately.

Proposed Update of the Wastewater Systems Development Charge

Wastewater SDC			
Meter Size	Reimbursement	Improvement	**Total SDC**
⅝ x ¾	$1,916	$601	$2,517
¾	3,832	1,202	$5,034
1	6,380	2,002	$8,382
1½	12,780	4,010	$16,790
2	20,444	6,414	$26,858
3	44,700	14,025	$58,725
4	76,640	24,046	$100,686
6	159,660	50,095	$209,755
8	229,920	72,139	$302,059
Multi-family Unit	$1,533	$481	$2,014

Proposed Update of the Stormwater Systems Development Charge

Type of Development	Stormwater SDC		
	Reimbursement	Improvement	Total SDC
Residential		$/DU	$/DU
Low Density	$0	$160.58	$160.58
Manufactured	$0	$78.29	$78.29
Medium/High Density	$0	$107.26	$107.26
Non-Residential		$/1,000 sf	$/1,000 sf
Residential/Commercial (mixed use)	$0	$251.70	$251.70
Convenience	$0	$173.28	$173.28
Downtown	$0	$251.70	$251.70
Highway	$0	$314.63	$314.63
Commercial/Manufacturing	$0	$487.41	$487.41
Industrial	$0	$147.34	$147.34
Schools	$0	$217.67	$217.67

BE IT FURTHER RESOLVED that, except as otherwise specified in Ordinance 867, future changes to the methodology and charges resulting solely from inflationary cost impacts shall be measured and calculated annually by the City Recorder and charged according based upon changes in the Engineering News Record Construction Cost Index (ENR Index) of Portland, Oregon, with the current ENR Index as of enactment of this Resolution to be used for the basis of future calculations.

BE IT FURTHER RESOLVED that the Canby City Council hereby classifies the charges imposed herein as not being subject to the limitations imposed by Section 11 (b), Article XI of the Oregon Constitution and that the City Recorder is hereby directed to publish notice in accordance with ORS 310.145.

NOW THEREFORE, IT IS HEREBY RESOLVED by the City Council of the City of Canby, as follows:

To adopt the City of Canby Wastewater and Stormwater System Development Charges as attached hereto as Exhibit "A" and Exhibit "B".

This resolution shall take effect July 1, 2012.

ADOPTED this 20th day of June 2012, by the Canby City Council.

Randy Carson

Randy Carson
Mayor

ATTEST:

Kimberly Scheafer

Kimberly Scheafer, MMC
City Recorder

Exhibit "A"

City of Canby, Oregon

ANALYSIS & UPDATE OF THE

WASTEWATER SYSTEM DEVELOPMENT CHARGE

Fiscal Year 2011-12

Prepared by:

ECONOMIC & FINANCIAL ANALYSIS

1409 Franklin Street ▪ Suite 201
Vancouver, WA 98660

March 2012

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INTRODUCTION

The City of Canby retained Economic & Financial Analysis (EFA) to update the City's wastewater system development charge. This update accounts for capital improvements that have been made since the last SDC update in 2006, and adjusts the SDC to match each meter size with its capacity using meter equivalencies developed by the American Water Works Association (AWWA).[1] The result is an increase in the SDC for some meter sizes, and a decrease for others. All SDCs have been rounded to the nearest $1.00.

Table 1 is a comparison of the current and proposed wastewater SDCs by meter size using the AWWA meter equivalencies for a ⅝ x ¾-inch turbine meter. A comparison of Canby's SDCs to those of 12 other nearby or similarly-sized Oregon cities is attached as Appendix A.

Table 1 Comparison of Current & Proposed Wastewater SDCs

	Wastewater SDC		Change	
Meter Size	Current	Proposed	$	%
⅝ x ¾	$2,571	$2,517	($54)	-2.1%
¾	$2,571	$5,034	$2,463	95.8%
1	$5,142	$8,382	$3,240	63.0%
1½	$12,855	$16,790	$3,934	30.6%
2	$25,710	$26,858	$1,148	4.5%
3	$64,275	$58,725	($5,550)	-8.6%
4	$89,985	$100,686	$10,701	11.9%
6		$209,755		
8		$302,059		
Multi-family Unit	$2,056	$2,014	($43)	-2.1%

WASTEWATER SDC METHODOLOGY

Calculation & Assumptions

The current SDC consists of a reimbursement fee and an improvement fee. The reimbursement fee is based on the current cost of replacing existing improvements, and the improvement fee is based on the current cost of constructing future improvements. These costs are used to determine the wastewater treatment plant's cost per gallon of average capacity.

[1] American Water Works Association, "Table 5-3: Test Requirements for New, Rebuilt, and Repaired Cold-Water Water Meters." *Water Meters—Selection, Installation, Testing, and Maintenance* (4th Ed, 1999)

The cost per gallon of capacity for each of the existing and proposed improvements is applied by meter size based on the number of equivalent households using a ⅝ x ¾-inch meter—*i.e.*, a ⅝-inch inlet from the main water line and a ¾-inch outlet to the building. This is the smallest and most commonly used meter for a single-family residence.

The current methodology assumes an average of 2.83 persons per household[2] and an average sewage flow of 80 gallons per capita per day (gcd) based on the City's historical averages for households on a ⅝ x ¾-inch meter. This brings the average daily sewage for a single-family household to 226 gallons per day (2.83 persons x 80 gallons), and provides the basis for determining meter equivalencies and SDCs.

Meter Equivalencies

The City currently installs only turbine-type meters, and the ⅝ x ¾-inch meter equivalents in Table 2 are based on the AWWA standard equivalencies for turbine meters. The ⅝ x ¾-inch meter serves as the base unit. For larger meters, the meter equivalency becomes the multiplier for determining the SDC.

Table 2 Meter Capacities & Equivalencies

Meter Size	Current ⅝ x ¾ Equivalent	Safe Maximum Operating Capacity (gpm)	AWWA^ ⅝ x ¾ Equivalent
⅝ x ¾	1	15	1.00
¾	1	30	2.00
1	2	50	3.33
1 ½	5	100	6.67
2	10	160	10.67
3	25	350	23.33
4	35	600	40.00
6		1250	83.33
8		1800	120.00
Multi-family Unit	0.8		0.8

^ American Water Works Association, "Table 5-3: Test Requirements for New, Rebuilt, and Repaired Cold-Water Water Meters." *Water Meters—Selection, Installation, Testing, and Maintenance* (4th Ed, 1999)

Meter Size & Meter Equivalents

The City's current SDCs are based on the history of *actual* water usage and sewage production for the size meter installed. The proposed SDCs are based on the *capacity* of each meter size and the number of equivalent ⅝ x ¾-inch meters. For example, 1½-inch turbine meters can pass as much water as 6.67 ⅝ x ¾-inch meters. Although the City currently has no meters larger than 4 inches (nor are the SDCs for larger meters defined), our SDC schedule includes calculations for meters up to 8 inches in diameter.

[2] 2010 U.S. Census: City of Canby, Oregon, *Average Household Size of Renter-Occupied Units*

Multi-family Units

The SDC for multi-family housing units is based on usage rather than meter size. Multi-family housing units that share a common water meter and sewer connection historically use approximately 80% of the amount of water used by a single-family residence, and the SDC per unit is therefore based on a meter equivalent of 0.8. The actual SDC, however, is the higher of the SDC per unit (multiplied by the number of units) or the SDC per meter size.

WASTEWATER SDC UPDATE

Reimbursement Fee

The City has made $1,863,360 in capital improvements to its wastewater system (2011 dollars) since the last SDC update in 2006. The system's current average load is 1.1 million gallons per day (mgd), and the City is in the process of increasing the system's overall capacity from 2.0 to 2.8 mgd Average Dry Weather Flow (ADWF). This is being accomplished by increasing the capacity of each component to 2.8 mgd upon replacement. The replacement cost for all components is therefore based on a 2.8 mgd capacity.

Table 3 is a list of existing wastewater improvements, the current replacement cost for each, and the cost per gallon of capacity (replacement cost divided by 2.8 million gallons). The total cost per gallon of all existing improvements is $8.48.

Table 3 Value of Existing Wastewater Improvements

No.	Description	Replacement Cost (2011 $)	$/gal
1	Land Values		
(a)	WWTP Site Land, 13.17 ac at $100k /ac	$1,317,000	$0.470
(b)	Willamette River Wayside, (26 of 34 ac at $30k /ac)	$780,000	$0.279
2	Primary Clarifier	$800,000	$0.286
3	Decant Treatment Basin	$200,000	$0.071
4	WASH Tank	$200,000	$0.071
5	SS Holding Tank	$200,000	$0.071
6	Old Blower Bld & Flammable Storage	$140,000	$0.050
7	Lab Building	$220,000	$0.079
8	Sludge Holding Ponds (3)	$420,000	$0.150
9	Disinfection Contact Basin	$100,000	$0.036
10	1994 WWTP Expansion	$5,450,000	$1.946
11	Odor Control (96)	$140,000	$0.050
12	Screen & Compacting (96)	$60,000	$0.021
13	UV Basin Covers (97)	$520,000	$0.186
14	Site Piping / Outfall	$240,000	$0.086
15	Retained site improvements	$60,000	$0.021

No.	Description	Replacement Cost (2011 $)	$/gal
16	1998 Aeration Basin Construction	$3,600,000	$1.286
17	2002 Dewatering & Filtration Improvements	$3,000,000	$1.071
18	2010 Drier & UV Improvements	$2,500,000	$0.893
Subtotal: Existing Land & WWTP Improvements		$19,947,000	$7.12
19	Collection System Improvements		
(a)	Redwood Interceptor (89)	$1,560,000	$0.557
(b)	Collection System Pumping Stations & Force Mains (7)	$2,100,000	$0.750
(c)	Oversizing: Township, South Pine, Territorial Rd	$130,000	$0.046
Subtotal: Existing Collection System Improvements†		$3,790,000	$1.35
TOTAL VALUE OF ALL EXISTING IMPROVEMENTS		$23,737,000	
$/gallon of capacity			**$8.48**

Source: *Curran-McLeod,* September 2011

Table 4 compares the current and proposed reimbursement fee by meter size. The proposed fee for a ⅝ x ¾-inch meter is $1,916 ($8.48 *x* 226 gallons)—a decrease of $2.00 over the current reimbursement fee of $1,918.

Table 4 Wastewater Reimbursement Fee

	Reimbursement Fee		Change	
Meter Size	Current	Proposed	$	%
⅝ x ¾	$1,918	$1,916	($2)	-0.1%
¾	$1,918	$3,832	$1,914	99.8%
1	$3,836	$6,380	$2,544	66.3%
1½	$9,590	$12,780	$3,190	33.3%
2	$19,180	$20,444	$1,264	6.6%
3	$47,950	$44,700	($3,250)	-6.8%
4	$67,130	$76,640	$9,510	14.2%
6		$159,660		
8		$229,920		
Multi-family Unit	$1,534	$1,533	($1)	-0.1%

Improvement Fee

Table 5 lists the capital improvements to be constructed at the expense of the City's ratepayers. The various components of the existing wastewater system have capacities ranging from 2.0 mgd to 2.8 mgd. The proposed improvements will increase the capacity of the entire system to 2.8 mgd. We use the total future capacity of 2.8 mgd to determine the cost per unit.

Using the methods described above, the combined cost per gallon of capacity for all future improvements is $2.66. As shown in Table 6, this results in an improvement fee of $601 for a ⅝ x ¾-inch meter ($2.66 *x* 226 gallons)—a decrease of 7.9% over the current fee of $653.

Table 5 Cost of Future Wastewater Improvements

No.	Description	Capacity (mgd ADWF)	Yrs 1-5 (FY 2012-2016) Cost Estimate	$/gal	Yrs 6-10 (FY 2017-2021) Cost Estimate	$/gal	Yrs 11-20 (FY 2022-2031) Cost Estimate	$/gal	Totals Cost Estimate	$/gal
1	Secondary Scum Pump Station	2.8	$60,000	$0.02					$60,000	$0.02
2	Effluent Filtration	2.8	$350,000	$0.13					$350,000	$0.13
3	Odor Control Improvements	2.8	$600,000	$0.21					$600,000	$0.21
4	Sludge Conditioning Basin, 600,000g	2.8	$800,000	$0.29					$800,000	$0.29
5	SCADA System Improvements	2.8	$150,000	$0.05					$150,000	$0.05
6	RV Septic Receiving Station	2.8			$125,000	$0.04			$125,000	$0.04
7	Headworks Screening	2.8			$750,000	$0.27			$750,000	$0.27
8	Outfall Diffuser Improvements	2.8			$250,000	$0.09			$250,000	$0.09
9	Dried Sludge Storage Building	2.8	$80,000	$0.03					$80,000	$0.03
10	New Lab Building Construction	2.8			$600,000	$0.21			$600,000	$0.21
11	Employee Support Building	2.8			$420,000	$0.15			$420,000	$0.15
12	Additional Primary Clarifier	2.8					$800,000	$0.29	$800,000	$0.29
13	Effluent Irrigation System	2.8			$450,000	$0.16			$450,000	$0.16
14	Power Distribution System Upgrades	2.8					$600,000	$0.21	$600,000	$0.21
15	Collection System Upsizing/Oversizing									
(a)	South 2nd Trunk, MH R-26 to O-39	2.8					$160,000	$0.06	$160,000	$0.06
(b)	NW Territorial Road Trunk Oversizing	2.8					$20,000	$0.01	$20,000	$0.01
(c)	Mulino Pump Station & Force Main	2.8					$360,000	$0.13	$360,000	$0.13
(d)	North 22nd Pump Station & Force Main	2.8					$280,000	$0.10	$280,000	$0.10
(e)	North Birch Pump Station & Force Main	2.8					$280,000	$0.10	$280,000	$0.10
(f)	System Oversizing	2.8					$50,000	$0.02	$50,000	$0.02
16	System Planning, SDC & Rates	2.8					$250,000	$0.09	$250,000	$0.09
TOTAL COST OF ALL IMPROVEMENTS (2011 $)			$2,040,000		$2,595,000		$2,800,000		$7,435,000	
	$ / gallon of capacity			$0.73		$0.92		$1.01		**$2.66**

Source: *Curran-McLeod,* February 2011

Table 6 Wastewater Improvement Fee

Meter Size	Improvement Fee		Change	
	Current	Proposed	$	%
⅝ x ¾	$653	$601	($52)	-7.9%
¾	$653	$1,202	$549	84.1%
1	$1,306	$2,002	$696	53.3%
1½	$3,265	$4,010	$745	22.8%
2	$6,530	$6,414	($116)	-1.8%
3	$16,325	$14,025	($2,300)	-14.1%
4	$22,855	$24,046	$1,191	5.2%
6		$50,095		
8		$72,139		
Multi-family Unit	$522	$481	($41)	-7.9%

Total Wastewater SDC

The wastewater SDC is the sum of the reimbursement fee and improvement fee, as shown in Table 7. The proposed reimbursement and improvement fees result in a total SDC of $2,517 for a ⅝ x ¾-inch water meter—a decrease of 2.1% over the current fee of $2,571 (Table 1). This reduction is due primarily to the creation of a separate stormwater SDC. The reimbursement fee has decreased because the current SDC included assets used for the stormwater system, which have been removed from the proposed SDC. The improvement fee decreased in part because the current SDC includes stormwater improvements, but also because the list of capital improvements has been reduced.

Table 7 Proposed Wastewater SDC

Meter Size	Proposed SDC		
	Reimbursement	Improvement	Total SDC
⅝ x ¾	$1,916	$601	$2,517
¾	3,832	1,202	$5,034
1	6,380	2,002	$8,382
1½	12,780	4,010	$16,790
2	20,444	6,414	$26,858
3	44,700	14,025	$58,725
4	76,640	24,046	$100,686
6	159,660	50,095	$209,755
8	229,920	72,139	$302,059
Multi-family Unit	$1,533	$481	$2,014

ANNUAL ADJUSTMENT FOR INFLATION

As provided in ORS 223.304(7)(b), the City may adjust the SDC periodically using the Construction Cost Index (CCI) published by McGraw Hill, Inc. in its weekly periodical, *ENR*. This publisher's construction (and building) cost index is widely accepted in the engineering and construction industry. *ENR* updates the CCI monthly and provides annual summaries in the July edition.

EFA recommends the City update the SDC annually, effective July 1 of each year to correspond with the City's fiscal year.

The formula for updating the SDC is as follows:

$$SDC_{current\ year} = SDC_{last\ year} \times (CCI_{current\ year} / CCI_{last\ year})$$

where:

$CCI_{current\ year}$ = Construction Cost Index for the current year
$CCI_{last\ year}$ = Construction Cost Index for the last year the SDCs were updated
$SDC_{current\ year}$ = the SDC updated by the CCI
$SDC_{last\ year}$ = the SDC to be updated

APPENDIX

Comparison of Canby's Wastewater SDCs with Select Oregon Cities

SDC is per Single-family Residence, rounded to the nearest $1.00

Sorted By Rank

Jurisdiction	Wastewater SDC/DU	Rank
Dundee	$5,856	1
Gresham	$5,056	2
West Linn	$4,856	3
Silverton	$4,505	4
Clean Water Services^	$4,500	5
Forest Grove	$4,500	5
Portland	$4,335	7
Corvallis	$4,196	8
Wilsonville	$4,153	9
Sherwood	$4,106	10
Oregon City	$3,727	11
Tualatin	$3,600	12
Stayton	$3,528	13
Woodburn	$2,977	14
Canby, proposed	**$2,517**	**15**
McMinnville	$2,402	16
Lake Oswego	$2,344	17
Eugene	$2,053	18
Aurora	$2,032	19
Milwaukie	$893	20
Average	$3,607	

Sorted Alphabetically

Jurisdiction	Wastewater SDC/DU	Rank
Aurora	$2,032	19
Canby, proposed	**$2,517**	**15**
Clean Water Services^	$4,500	5
Corvallis	$4,196	8
Dundee	$5,856	1
Eugene	$2,053	18
Forest Grove	$4,500	5
Gresham	$5,056	2
Lake Oswego	$2,344	17
McMinnville	$2,402	16
Milwaukie	$893	20
Oregon City	$3,727	11
Portland	$4,335	7
Sherwood	$4,106	10
Silverton	$4,505	4
Stayton	$3,528	13
Tualatin	$3,600	12
West Linn	$4,856	3
Wilsonville	$4,153	9
Woodburn	$2,977	14
Average	$3,607	

Source: *Economic & Financial Analysis*, 2011-12 Survey

^CWS serves Beaverton, Cornelius, Forest Grove, Hillsboro, Sherwood, Tigard, Tualatin

City of Canby, Oregon

ANALYSIS & UPDATE OF THE

STORMWATER SYSTEM DEVELOPMENT CHARGE

Fiscal Year 2011-12

Prepared by:

ECONOMIC & FINANCIAL ANALYSIS

1409 Franklin Street ▪ Suite 201
Vancouver, WA 98660

March 2012 (corrected)

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INTRODUCTION

The City of Canby retained Economic & Financial Analysis (EFA) to update the City's stormwater system development charge (SDC), which was developed in 1994 by the City's consulting engineer, Curran-McLeod, Inc., and last updated in 2006.

The list of capital improvements was revised by Curran-McLeod in 2011 and provides the basis for updating the SDC, along with data from the *2011 Transportation Plan*.[1] The costs and values of the variables have been adjusted using the current methodology, which is based on transportation concepts discussed below.

Table 1 is a comparison of the current and proposed stormwater SDCs. Residential uses are measured in dwelling units (DU). Non-residential uses are measured in units of 1,000 square feet of building area. The current SDCs are rounded to the nearest $1.00, while the proposed SDCs are rounded to the nearest $0.01. A comparison of Canby's single-family residential stormwater SDCs to those of other nearby or similarly-sized Oregon cities is attached as Appendix A.

Table 1 Comparison of Current & Proposed Stormwater SDCs

	Stormwater SDC		Change^	
Type of Development	Current	Proposed	$	%
Residential	$/DU		$/DU	
Low Density	$100.00	$160.58	$60.58	60.6%
Manufactured	$40.00	$78.29	$38.29	95.7%
Medium/ High Density	$60.00	$107.26	$47.26	78.8%
Non-Residential	$/1,000 sf		$/1,000 sf	
Residential/Commercial (mixed use)	$160.00	$251.70	$91.70	57.3%
Convenience	$100.00	$173.28	$73.28	73.3%
Downtown	$160.00	$251.70	$91.70	57.3%
Highway	$190.00	$314.63	$124.63	65.6%
Commercial/Manufacturing	$230.00	$487.41	$257.41	111.9%
Industrial	$90.00	$147.34	$57.34	63.7%
Schools	$130.00	$217.67	$87.67	67.4%

^ The variance in % change among types of development is the result of rounding. The current SDC is rounded to the nearest $1.00/ADT; the proposed SDC is rounded to the nearest $0.01/ADT.

[1] *DKS Associates,* January 2011

STORMWATER SDC METHODOLOGY

The current SDC methodology was developed in 1994 by the City's consulting engineer, Curran-McLeod, Inc., using the City's no-discharge stormwater ordinance as a guide. For much of the City, only roadways contribute stormwater (and stormwater pollutants) to the stormwater collection and treatment system. The only areas permitted to discharge to the stormwater system are the downtown area, which has zero-setback developments, and the area along North Redwood Street, which has a high groundwater table. For this reason the methodology was based on transportation concepts.

EFA uses the current methodology for this SDC update. Once the City's stormwater master plan is completed, however, the City may want to switch to the more common methodology of impervious surface area per development.

To update the SDC, we rely on the stormwater CIP and data provided in the 2011 Transportation Plan. The SDC is calculated using a unit of Equivalent Length New Daily Trips (ELNDT), which is comprised of two elements: (1) the total number of Average Daily Trips (ADT), and (2) a Trip Factor derived from the number of Average Daily Trips by type of development, adjusted for length and linked trips (*e.g.*, a trip from home to store to work and home again).

This update is based on the *2011 Canby Transportation Plan*, which measures PM Peak-hour Trips rather than Average Daily Trips. Two adjustments to the data were necessary in order to update the Equivalent Length New Daily Trips:

(1) Convert 2011 *PM Peak-hour Trips* to *Average Daily Trips* using data provided by the City's transportation planners (Table 2); and

(2) Apply the *Trip Factor*[2] to the 2011 *Average Daily Trips* to derive *Equivalent Length New Daily Trips* (Table 3).

The result: *ADT x Trip Factor = ELNDT*.

[2] Institute of Transportation Engineers, *Trip Generation Handbook* [October 1998], Chapter 5, Pass-by, Primary, and Diverted Linked Trips

Table 2 Current & Future Average Daily Trips (ADTs)

Type of Development	# Units 2009	Growth	2030	# Trips / Unit PM Peak	ADT^	Total Trips 2009	2030	Change # ADTs	%
Residential	Dwelling Units								
	6,127	4,403	10,530	0.75	7.5	45,953	78,975	33,023	72%
Non-Residential	Employees								
Retail	624	715	1,339	4.10	41.0	25,584	54,899	29,315	115%
Service	1,004	644	1,648	2.20	22.0	22,088	36,256	14,168	64%
Educational	409	257	666	1.64	16.4	6,708	10,922	4,215	63%
Other Uses	1,928	3,007	4,935	0.30	3.0	5,784	14,805	9,021	156%
Total Average Daily Trips (ADT)						106,116	195,857	89,741	85%

Source: DKS Associates, Chris Maciejewski, PE, et al, *Numbers of Households & Employees and PM Peak Trip Rates*, Tech Memo #3, [submitted as part of the *Canby Transportation System Plan* update], p. 6/13, Table 2.

^ The ADT Trip Rate is 10 times the PM Peak rate, as recommended by DKS Associates.

Table 3 Calculation of Equivalent Length New Daily Trips (ELNDTs)

Type of Development	# ADTs	Trip Factor^ Length	*x* Link	= Trip Factor	# ELNDTs
Residential	per DU		per DU		per DU
Low Density	9.57	1.00	1.00	1.000	9.57
Manufactured	4.81	0.97	1.00	0.970	4.67
Medium/High Density	6.59	0.97	1.00	0.970	6.39
Non-Residential	per 1,000 sf		per 1,000 sf		per 1,000 sf
Residential/Commercial (mixed use)	30.00	0.50	1.00	0.500	15.00
Convenience	368.80	0.08	0.35	0.028	10.33
Downtown	30.00	0.50	1.00	0.500	15.00
Highway	100.00	0.25	0.75	0.188	18.75
Commercial/Manufacturing	38.00	0.91	0.84	0.764	29.05
Industrial	7.84	1.12	1.00	1.120	8.78
Schools	12.00	1.08	1.00	1.081	12.97

^ The *Trip Factor* is the product of the *Length* multiplied by the *Link*. The ADT multiplied by the total Trip Factor equals the ELNDT. The Institute of Transportation Engineers (ITE) defined these factors in its *Trip Generation Handbook*. The factors require the reader to determine the primary destination of a particular trip and its length, and whether a trip to the store, for example, is between home (origin) and work (primary destination), or whether the trip to the store is the primary destination. The data to support the factors includes only 22 of the 178 land uses contained in the ITE *Trip Generation Manual* (8th Ed.). Only one new use has been added since 1998, and the factors were not used in the City's current transportation plan.

STORMWATER SDC UPDATE

Reimbursement Fee

Construction of the City's existing stormwater system was funded by developers as land was developed. The use of tax or user fee revenues was not required, and the reimbursement fee is therefore zero.

Table 4 Stormwater Reimbursement Fee

Type of Development	Reimbursement Fee Current	Reimbursement Fee Proposed	Change $	Change %
Residential	$/DU		$/DU	
Low Density	$30.00	$0	($30.00)	-100%
Manufactured	$10.00	$0	($10.00)	-100%
Medium/High Density	$20.00	$0	($20.00)	-100%
Non-Residential	$/1,000 sf		$/1,000 sf	
Residential/Commercial (mixed use)	$50.00	$0	($50.00)	-100%
Convenience Store	$30.00	$0	($22.00)	-100%
Downtown	$50.00	$0	($25.00)	-100%
Highway	$60.00	$0	($41.00)	-100%
Commercial/Manufacturing	$70.00	$0	($53.00)	-100%
Industrial	$30.00	$0	($17.00)	-100%
Schools	$40.00	$0	($30.00)	-100%

Improvement Fee

New regulations on stormwater management and treatment will require significant revisions to the existing stormwater system, and additional and larger detention facilities. The City plans to update the current stormwater master plan in the next few years. The projects include long-range planning and permitting, and construction of regional detention facilities for major storm runoff. The City will have to invest tax and user fee revenues in these planned improvements to the stormwater system.

Table 5 shows the known capital projects for the stormwater system and the allocation of costs to existing and future development. With the exception of the *System Oversizing* project, all of the improvements listed in Table 5 will benefit both current and future development. The cost per ADT for these projects equals the project cost divided by the total number of ADTs (195,857) forecast in the year 2030 (Table 2). For example, the improvement fee for the first project listed below, *WPCF/NPDES Permitting*, is $0.26 per ADT—or $50,000 ÷ 195,857 ADTs, rounded to the nearest $0.01.

The *System Oversizing* project, however, benefits only future development. Its purpose is to increase the capacity of the City's stormwater facilities in order to meet future growth requirements, and the cost per ADT is therefore calculated by dividing the project cost by the *new* ADTs only (87,741). This equals $1.11 per ADT—or $100,000 ÷ 89,741 ADTs.

Table 5 Cost of Future Stormwater Improvements

No.	Description	Cost Estimate	$/ELNDT^
1	WPCF/NPDES Permitting	$50,000	$0.26
2	Planning		
(a)	Stormwater Master Plan	$40,000	$0.20
(b)	UIC Decommissioning Plan	$40,000	$0.20
(c)	Stormwater Management Plan	$40,000	$0.20
3	UIC Decommissioning/BMP Implementation	$500,000	$2.55
4	Regional Detention Facility – NW 3rd & Baker	$1,200,000	$6.13
5	Regional Detention Facility – NE Territorial Rd	$1,200,000	$6.13
6	System Oversizing	$100,000	$1.11
	Total Improvements / Cost per Trip	$3,170,000	$16.78

Source: *Curran-McLeod,* February 2011

^The cost per ADT is based on the total existing and future ADTs with the exception of *System Oversizing,* which benefits only future development and is therefore based on the number of new (future) ADTs only.

The sum of the improvement fees per project multiplied by the Trip Factor in Table 3 equals the improvement fee per ELNDT, as shown in Table 6. For example, the improvement fee for a mixed Residential/Commercial use equals the number of ADTs per 1,000 square feet of building area (30.0), multiplied by the Trip Factor (0.50), multiplied by the Cost per Trip ($16.78)—or 30.0 x 0.50 x $16.78, which results in an improvement fee of $251.70 per 1,000 square feet of building area.

Table 6 Stormwater Improvement Fee

	Improvement Fee		Change^	
Type of Development	Current	Proposed	$	%
Residential	$/DU		$/DU	
Low Density	$70.00	$160.58	$90.58	129%
Manufactured	$30.00	$78.29	$48.29	161%
Medium/High Density	$40.00	$107.26	$67.26	168%
Non-Residential	$/1,000 sf		$/1,000 sf	
Residential/Commercial (mixed use)	$110.00	$251.70	$141.70	129%
Convenience Store	$70.00	$173.28	$103.28	148%
Downtown	$110.00	$251.70	$141.70	129%
Highway	$130.00	$314.63	$184.63	142%
Commercial/Manufacturing	$160.00	$487.41	$327.41	205%
Industrial	$60.00	$147.34	$87.34	146%
Schools	$90.00	$217.67	$127.67	142%

^ The variance in % change among types of development is the result of rounding: the current SDC is rounded to the nearest $10.00/DU or per 1,000 sq while the proposed SDC is rounded to the nearest $0.01/ DU or per 1,000 sq.

Total Stormwater SDC

The sum of the reimbursement fee and improvement fee comprises the total stormwater SDC, as shown in Table 7.

Table 7 Proposed Stormwater SDC

Type of Development	Stormwater SDC		
	Reimbursement	Improvement	Total SDC
Residential	$/DU		$/DU
Low Density	$0	$160.58	$160.58
Manufactured	$0	$78.29	$78.29
Medium/High Density	$0	$107.26	$107.26
Non-Residential	$/1,000 sf		$/1,000 sf
Residential/Commercial (mixed use)	$0	$251.70	$251.70
Convenience	$0	$173.28	$173.28
Downtown	$0	$251.70	$251.70
Highway	$0	$314.63	$314.63
Commercial/Manufacturing	$0	$487.41	$487.41
Industrial	$0	$147.34	$147.34
Schools	$0	$217.67	$217.67

ANNUAL ADJUSTMENT FOR INFLATION

As provided in ORS 223.304(7)(b), the City may adjust the SDC periodically using the Construction Cost Index (CCI) published by McGraw Hill, Inc. in its weekly periodical, *ENR*. This publisher's construction (and building) cost index is widely accepted in the engineering and construction industry. *ENR* updates the CCI monthly and provides annual summaries in the July edition.

EFA recommends the City update the SDC annually effective July 1 of each year to correspond with the City's fiscal year.

The formula for updating the SDC is as follows:

$$SDC_{current\ year} = SDC_{last\ year} \times (CCI_{current\ year} / CCI_{last\ year})$$

where:

$CCI_{current\ year}$ = Construction Cost Index for the current year
$CCI_{last\ year}$ = Construction Cost Index for the last year the SDCs were updated
$SDC_{current\ year}$ = the SDC updated by the CCI
$SDC_{last\ year}$ = the SDC to be update

APPENDIX

Comparison of Canby's Stormwater SDC with Select Oregon Cities

SDC is per Single-family Residence, rounded to the nearest $1.00

Sorted By Rank

Jurisdiction	Stormwater SDC/DU	Rank
Dundee	$2,436	1
Stayton	$1,462	2
Milwaukie	$1,057	4
West Linn	$974	5
Gresham	$824	6
Aurora	$821	7
Portland	$783	8
Oregon City	$648	9
Sherwood	$614	10
Eugene	$557	11
Forest Grove	$525	12
Clean Water Services^	$500	13
Wilsonville	$492	14
Woodburn	$275	15
Corvallis	$190	16
Canby, proposed	**$161**	**17**
Lake Oswego	$129	18
Canby, current	$70	19
Average	$736	

Sorted Alphabetically

Jurisdiction	Stormwater SDC/DU	Rank
Aurora	$821	7
Canby, current	$70	19
Canby, proposed	**$161**	**17**
Clean Water Services^	$500	13
Corvallis	$190	16
Dundee	$2,436	1
Eugene	$557	11
Forest Grove	$525	12
Gresham	$824	6
Lake Oswego	$129	18
Milwaukie	$1,057	4
Oregon City	$648	9
Portland	$783	8
Sherwood	$614	10
Stayton	$1,462	2
West Linn	$974	5
Wilsonville	$492	14
Woodburn	$275	15
Average	$736	

Source: *Economic & Financial Analysis*, 2011-12 Survey

^CWS serves Beaverton, Cornelius, Forest Grove, Hillsboro, Sherwood, Tigard, Tualatin