Exhibit B

City of Portland Bureau of Environmental Services Sanitary and Stormwater System Development Charge Methodology May 1, 2013

Purpose

This document sets forth and discusses the methodology for calculating the Sanitary System Development Charge ("Sanitary SDC") and the Stormwater System Development Charge ("Stormwater SDC"). The calculation of both charges is intended to reflect the use of existing system facilities by development, and the recovery of an equitable share of the costs of these facilities from new development.

Consideration of ORS 223.304 Factors

The Sanitary and Stormwater SDCs are reimbursement fees as defined in ORS 223.299 (3):

... a fee for costs associated with capital improvements already constructed or under construction.

For purposes of this document, "capital improvements" and "facilities" will be used interchangeably. Sanitary sewer and stormwater facilities are defined as capital improvements necessary for the collection, conveyance, treatment, and disposal of sanitary sewage and stormwater runoff.

The intent of the Sanitary and Storm SDCs is to recover an equitable share of facilities costs from new development. The calculation methodology takes the costs of existing facilities and several additional factors into consideration in arriving at a cost basis for reimbursement. Factors considered in developing the calculation methodology include:

- 1. *The cost of existing facilities.* For purposes of the Sanitary and Stormwater SDCs, facilities costs are replacement costs. The replacement cost calculations employ the Engineering News Record Construction Cost Index to bring original facilities costs up to their present value.
- 2. *Rate making principles employed to finance publicly owned capital improvements.* Only the portion of facilities costs paid by current and past ratepayers is included in facilities costs eligible for SDC recovery (reimbursable facilities costs). For facilities funded by revenue bonds (essentially all facilities since 1985), replacement costs are prorated over the term of the bonds (either 20 or 25 years depending on the issue) to approximate the cumulative debt service paid on the bonds.
- 3. *Gifts or grants from federal or state government or private persons.* The portion of facilities costs paid for from these revenue sources are not included in the cost basis for Sanitary or Stormwater SDCs.
- 4. *Prior contributions by existing ratepayers.* A return on equity for the portion of facilities constructed with ratepayer funds is included in the calculation as a carrying cost for current and past ratepayers. The return on equity portion calculates simple interest foregone on each

year's original project cost using each year's annual average 6-month Treasury Bill secondary market rate.

5. *The value of unused capacity available for future system users.* The methodology used here values each unit of capacity equally. New development "buys into" the existing system on the same basis as current ratepayers.

To compute reimbursable facilities costs for the Sanitary SDC then, the original costs of sanitary sewer system facilities are adjusted by an index of construction costs to develop a present value replacement cost for those facilities. These costs are also adjusted to reflect a return on equity for existing ratepayers, who incurred the investment cost of constructing them. However, only that portion of facilities costs actually paid by ratepayers is included in the reimbursable cost total. For example, if a particular facility built five years ago was financed with 20-year revenue bonds, only one fourth of that facility's adjusted costs is included in as a reimbursable cost for purposes of the Sanitary SDC.

The calculation of reimbursable facilities costs is the same for the Storm SDC.

Sanitary SDC Calculations

Applying the above methodology to sanitary sewer facilities yield the following numbers:

Present Value Replacement Cost	\$1,602,017,622
Return on Equity	\$389,298,533
Total Cost	\$1,991,316,155

These costs specifically exclude Local Improvement District development projects, developer permit projects, and grant-funded facilities.

For each customer, the Sanitary SDC is calculated as an average cost per equivalent dwelling unit ("EDU") times the number of dwelling units. For purposes of the Sanitary SDC, one EDU corresponds to the sanitary flow from a single-family dwelling. The total system treatment capacity is 341,300 EDUs. Dividing the above total cost by this amount yields an average cost of \$4,551 per EDU. The customer's charge is therefore:

Sanitary SDC = $4,551 \times EDU$

EDU Calculations

Single-family dwellings are assigned an EDU value of one. Multi-family dwellings are assigned 0.8 EDU per unit. EDU equivalencies for non-residential customers are based on plumbing fixture units ("PFUs") and business type. For some developments, the Bureau of Environmental Services may use estimates of future sanitary flows to calculate EDUs, if the Bureau deems such estimates as more accurate predictors of sanitary flow than the plumbing fixture approach. There is a two-step process for calculating EDUs using plumbing fixture units:

Step 1: The number of PFUs for a particular development is calculated using the plumbing fixture equivalency factors in Table 7-3 of the Oregon Plumbing Specialty Code in effect at the time of permit application. <u>Table 1</u> shows some common fixture types and their plumbing fixture equivalencies.

Step 2: The PFUs from Step 1 are converted to EDUs using a conversion ratio specified for that business type. Conversion ratios are set by the Bureau of Environmental Services and reflect the Bureau's assessment of sanitary water usage per PFU, by business type. Conversion ratios are shown in <u>Table 2</u>. The Bureau may update conversion ratios from time to time. The most current conversion ratios will be shown in the Administrative Rules for Sanitary System Development Charges.

The number of EDUs for non-residential customers is therefore calculated as:

 $EDUs = \frac{PFUs}{Number of PFUs per EDU}$

For instances where BES uses measured flow to calculate EDUs, the calculation is:

 $EDUs = \frac{Projected Sanitary Flow (in ccf)}{6 ccf}$

	Equivalency
Fixture Type	Factor
Bathtub or combination bath/shower	2.0
Clothes washer	6.0
Dental unit or cuspidor	1.0
Dishwasher	2.0
Drinking fountain or water cooler (per head)	0.5
Laundry sink	2.0
Lavatory, single	1.0
Lavatory, in sets of two or three	2.0
Floor drain, emergency	0.0
Floor drain	1.0
Service sink or Mop Basin	1.0
Shower stall	2.0
Sink, commercial	3.0
Sink, general	2.0
Urinal	2.0
Water closet, public	6.0
Water closet, private	4.0

Table 1. Fixture types and equivalency factors.

	NUMBER OF PFUs PER
	EQUIVALENT
OCCUPANCY	DWELLING UNIT
Fire Station	<u> </u>
Automotive Retailers	
Repair Services	
Education/Cultural	> 16.0
Churches/Clubs/Organizations	
Rental/Storage Services	
Construction Trade Services)
Retail Sales & Business without food service or public use facilities Food Service Beauty and Barber Salons Clothing & Dry Goods Stores Warehouses used for storage	} 12.0
Industry All other occupancies	} 7.0
Other Structures/Uses, Based on Measured Flow	600 Cubic Feet Per Month

Table 2. Dwelling unit equivalencies, by business type.

Review

When a new occupancy involves industrial wastewater flows (if the occupancy requires an industrial wastewater discharge permit), the Bureau may measure actual flows within two years of occupancy. EDUs will be calculated based on observed flows for a six-month interval. If EDUs based on observed average flows exceed EDUs initially purchased by more than twenty percent, then the additional EDUs must be purchased at the rate in effect at the time.

Stormwater SDC

The calculation of the Stormwater SDC is intended to reflect the use of existing stormwater facilities by new development. This use has several dimensions, corresponding to the various functions of the system. These functions include:

- 1. Collection, conveyance, and treatment of stormwater flows from properties.
- 2. Collection, conveyance, and treatment of stormwater flows from public rights of way. This service includes access to individual properties on local streets and use of arterial streets, unimpeded by flooding. It also includes protection of individual properties from hazardous materials spills in the right of way, as well as protection from flows originating elsewhere.

The calculation of the Stormwater SDC is intended to provide a proportional measure of new development's direct use of services from public drainage facilities as well as its indirect uses of and benefits from those facilities.

The charge has two components: an on-site charge and an off-site charge. The on-site charge reflects direct usage of public stormwater facilities, corresponding to 1) above. Credits against this portion of the charge reflect the contributions made by developers in managing on-site flows. The off-site charge reflects the indirect uses and benefits, corresponding to 2) above. The measure of proportionality for this charge is intended to reflect the relationship between these uses and benefits and the particular characteristics of the development.

Calculations

Applying the above methodology to stormwater facilities yield the following numbers:

Present Value Replacement Cost	\$309,482,485
Return on Equity	\$45,948,433
Total Cost	\$355,430,918

These costs specifically exclude Local Improvement District projects, developer permit projects, and grant-funded facilities.

On-site/Off-site Costs

Total facilities costs are divided between on-site and off-site costs. On-site costs represent that portion of total costs for facilities handling stormwater flows from individual properties. Off-site costs represent the portion of total costs for facilities handling stormwater flows from rights of way. Even a development discharging no water directly to public facilities uses and benefits from facilities handling off-site flows in one or more of the following ways:

- access to properties unimpeded by stormwater-related flooding of rights of way,
- general use of the right of way unimpeded by stormwater-related flooding,
- protection from hazardous materials spills in the right of way, and
- protection from off-site flows.

The Bureau allocation between on-site and off-site costs is based on the relative amounts of impervious area on properties and in public rights of way. This ratio represents a reasonable lower bound on right-of-way contributions to system capacity requirements since stormwater facilities are typically located in rights of way, and since stormwater flows from properties will be buffered by on-site stormwater management facilities as well as pervious soils and vegetation where present. Estimates developed using Portland Department of Transportation inventory data for rights of way and Geographical Information System data for other impervious area show that about 54% of the impervious area is in public rights of way, with the remaining 46% on properties:

Cost Category	Percentage of Total	Allocated Cost
On-site	46%	\$163,498,222
Off-site	54%	\$191,932,696

Access/Arterial Costs

Off-site costs are further split to reflect the various benefits received from facilities draining the right of way. There are two principal benefits: drainage of arterial streets, and access to individual properties. These costs are split according to the relative amounts of impervious area in each type of street, adjusting for the portion of arterial streets used for access to properties. According to the City of Portland Bureau of Transportation, arterial streets account for about 28% of total impervious area in rights of way, and local streets for about 72%. Part of street impervious area is in arterial streets serving as local streets, however, and should be reflected in the local access share. Adjusting the impervious area totals to reflect the portion of arterial streets also used for local access yields:

Cost Category	Percentage of Total	Allocated Cost
Local Access	92.6%	\$177,729,677
Arterial	7.4%	\$14,203,019

Of the \$355,430,918 in total costs, then, 46% or \$163,498,222 are on-site costs, 50% or \$177,729,677 are off-site costs allocated to local access, and the remaining 4%, or \$14,203,019 are off-site costs allocated to arterial streets.

Units of Service

The units of service for the three categories described are as follows:

	Total Units		
Cost Category	Unit of Measurement	in Service Area	Unit Cost
On-site	Thousands of square feet of impervious area (excluding rights of way)	970,000	\$169 per thousand square feet
Off-site			
Local Access	Feet of frontage	32,309,316	\$5.50 per foot
Arterial	Daily vehicle trips	4,883,218	\$2.91 per trip

In the absence of mitigation measures, flow from an individual site will be roughly proportional to the impervious area on that site. Access to an individual site is made using the right of way fronting the site. Daily vehicle trips are a proportionate measure of use of arterial streets.

Calculation of Charge

For each customer, the cost for each category is the product of service units times unit cost. The total charge is the sum of costs for the three categories. Using data from the above, this is:

Storm SDC = \$169.00 x SIA + \$5.50 x SF + \$2.91 x ST, where

SIA = net new impervious area on the site,

SF = site frontage,

ST = net new site vehicle trips. The Bureau of Transportation will calculate the trip data using the same methodology as that used in the calculation of the Transportation SDC.

Credits

Credits will be granted against the on-site portion of the Storm SDC in one of the following two cases:

- 1. Credits of 100% of the on-site portion will be granted for areas draining directly to the Willamette or Columbia Rivers, or to the Columbia Slough, provided that this discharge does not pass through reimbursable City facilities, and that the discharge meets all applicable water quality standards. Those applying for this credit must provide adequate documentation to demonstrate that stormwater flows from the site to those receiving bodies without passing through reimbursable City facilities.
- 2. Credits of 100% of the on-site portion will be granted for areas draining to facilities providing for facilities providing effective on-site retention for a 100 year storm event with a safety factor of two defined as a rainfall intensity of 8.28 inches per hour per square foot of impervious area. Those applying for this credit must provide adequate documentation to demonstrate this additional retention capacity, including testing of infiltration facilities, and that on-site flows are directed to these facilities.

No credits will be granted under 2) above for meeting minimum development standards. Public stormwater drainage facilities are designed to accommodate flows from rights of way and from adjacent properties, and their design assumes the existence of on-site facilities. Handling flows for a 10-year storm (the current design standard) does not imply that those flows remain on site under all conditions. Detention facilities may ultimately pass stormwater flows to public facilities, for example, and on-site flows from events exceeding a 10-year storm will make use of public facilities.

No credits will be granted against the off-site portion of the Storm SDC. The indirect uses of and benefits from public facilities will not vary with on-site stormwater facilities. The measures of proportionality used in calculating this portion of the charge reflect differences in indirect benefits by type of development.