RESOLUTION NO. 3287

A RESOLUTION ADOPTING METHODOLOGIES FOR THE DEVELOPMENT OF SYSTEM DEVELOPMENT CHARGES FOR THE SANITARY SEWER AND WATER SYSTEMS.

WHEREAS, the Council of the City of Albany has duly adopted Ordinance No. 4966 declaring their intent to comply with the provisions of ORS 223.207 through 223.208 and 223.297 through 223.314, an ordinance regarding systems development charges; and

WHEREAS, a methodology for the calculation of system development charges for the water and sanitary sewer systems has been developed as specifically described in Exhibits 'A' and 'B' (attached hereto);

NOW, THEREFORE, BE IT RESOLVED by the Albany City Council that the attached methodologies are hereby adopted.

Dated this 25th day of August, 1993.

Mayor

ATTEST:

Norm C. Withrow
Deputy City Recorder

METHODOLOGY VERSION HISTORY:

VERSION DATE	DESCRIPTION	BY
6/03/91	Original: Adopted by Res. 3072	PJB
7/27/93	1993 Revision: No Change to Water Methodology	PJB

EXHIBIT 'A'

WATER SYSTEM

SYSTEM DEVELOPMENT CHARGE METHODOLOGY

CITY OF Albany OREGON

City of Albany, Oregon

City of Albany Water System
System Development Charge Methodology

INTRODUCTION

Water system development charges (SDC's) will be developed for both the Albany Water Treatment Plant and the Albany Distribution System. As provided by House Bill 3224, the SDC will be divided into two categories, a Reimbursement Fee based on existing facilities or facilities already under construction; and an Improvement Fee, based on projects designated in the Albany/ Millersburg Water System Facility Plan prepared by Brown and Caldwell Consulting Engineers (1988), and designed to bring the plant's processing capability to 20 million gallons per day (MGD). The base SDC is developed for an equivalent 3/4-inch water meter, with a multiplier applied to this base to generate the SDC for larger sized water meters.

The Reimbursement Fee is intended to assess charges for the value of the unused capacity in the existing system to the new users of the water system. The value of this unused capacity is determined by analyzing financial record information, provided by the Albany Finance Department.

The Improvement Fee is intended to assess charges for future expansion or capacity increases to the system, expansion aimed at providing additional levels of capacity for future users. Capital projects, as indicated in the Albany/Millersburg Water System Facility Plan, will be used as the basis of planning for the development of this fee. Projects included will be those required to bring the system from a current capacity of 15 MGD to a future capacity of 20 MGD.

In order to distribute these costs to potential new users of the Albany water system, the number of existing equivalent meters within the Albany urban growth boundary which are currently being served is examined, and projected out to the amount that could potentially be served by the system upgrade. Calculations for the fees associated with unused capacity and "level of performance" improvements at the Treatment Plant, along with unused capacity in the distribution system, are distributed among all water customers within the water service area, based on the assumption that all users supplied with water from the Albany system will derive a benefit from level of performance improvements made to the system. Treatment Plant capacity and distribution system improvements, on the other hand, are assumed to benefit only those new users to the Albany system (exclusive of North Albany).

EQUIVALENT METER PROJECTIONS

A 3/4-inch water meter is defined as the base unit of demand for the system development charge, and will be designated as one equivalent meter. Albany Finance Department utility billing records have been utilized to develop the number of equivalent meters currently being served by the existing water system. This data is presented in Table 1. The existing number of equivalent meters is then used to project the number of future equivalent meters that could be served by the proposed upgrade to the system, which would provide an increased water processing capability at the treatment plant from the current 15 MGD level to a future level of 20 MGD. This ratio, of existing plant capability to future plant capability, applied to the existing number of equivalent meters, allows the projection of potential future users to the system. These calculations are shown in Table 2.

TABLE 1:
Existing Number of Equivalent 3/4-Inch meters, Albany Urban Growth Boundary

Existing Equivalent 3/4-Inch Meters:

Category	Number of Equivalent 3/4-Inch Meters
Residential	8,428
Industrial	237
Seasonal Food Processors	39
Commercial	3,255
North Albany	1,441
Total	13,400

TABLE 2:
Projected Equivalent 3/4-Inch Meters @ 20 MGD:

Projected Equivalent Meters, Albany Water Service Area =
(Future Plant Processing Capability / Existing Plant Processing Capability) x Existing Number of Equivalent Meters =
(20 MGD / 15 MGD) x 13,400 = **17,866**

Additional Equivalent Meters @ 20 MGD, Albany Water Service Area =
Projected Equivalent Meters - Existing Equivalent Meters =
17,866 - 13,400 = **4,466**

Existing Equivalent Meters, Excluding North Albany =
Total Equivalent Meters - North Albany Equivalent Meters =
13,400 - 1,441 = **11,959**

Projected Equivalent Meters, Excluding North Albany =
(Future Plant Processing Capability / Existing Plant Processing Capability) x Existing Equivalent Meters, Albany Only =
(20 MGD / 15 MGD) x 11,959 = **15,945**

Additional Equivalent Meters @ 20 MGD, Excluding North Albany =
Projected Equivalent Meters - Existing Equivalent Meters =
15,945 - 11,959 = **3,986**

SUMMARY OF EQUIVALENT METER CALCULATIONS:

Total projected number of equivalent meters, Albany Water Service Area @ 20 MGD **17,866**
Additional projected equivalent 3/4-inch meters, Albany Water Service Area @ 20 MGD **4,466**
Total projected number of equivalent meters, Excluding North Albany, @ 20 MGD **15,945**
Additional equivalent 3/4-inch meters, Excluding North Albany, @ 20 MGD **3,986**

REIMBURSEMENT FEE

As provided by House Bill 3224, a Reimbursement Fee may be established to allocate "costs associated with capital improvements already constructed or under construction". This fee is intended to assess new users for the value of unused capacity built into the existing system. In order to establish this fee, financial information is analyzed to determine the depreciated value of the existing water system. A percentage of this total is then allocated to new users of the system at the time of connection. In developing the value of the distribution system and treatment plant eligible for reimbursement fee funding, it is acknowledged that additional capacity has been built into the system by the historical construction of transmission mainlines and treatment plant improvements designed to provide additional capacity for future users.

Reimbursement fee calculations will be divided into two categories, one for costs associated with the treatment plant, and a second for costs associated with the distribution system. Tables 3 and 4 show the calculations required to determine the value of the existing distribution system. Tables 5 and 6 show costs associated with the treatment plant. Table 7 accumulates the subtotals and calculates the final reimbursement fee.

Table 3 details the original purchase cost of the water distribution system from Pacific Power & Light (PP&L), and recorded accumulated depreciation on this system, arriving at a book value for the originally purchased water distribution system.

A number of transmission mains have been constructed since the original purchase of the water system. In determining the reimbursable value of these lines, the value of contributed capital and accumulated depreciation recorded to date is deducted from the original construction cost. In this case, contributed capital amounts to funding provided by the Albany Redevelopment Agency (ARA) for the construction of some of these lines. Table 4 furnishes the calculations required to determine the value of existing transmission mains built since 1985.

TABLE 3:
Value of Existing Albany Distribution System Purchased from PP&L
Book values provided by Albany Finance Department.

Water Distribution System Purchase Price:	$5,532,200
Less Accumulated Depreciation:	(1,275,700)
Book Value of Existing Water Distribution System:	**$4,256,500**

TABLE 4:
Value of Existing Albany Distribution Lines Built Since 1985
Book values provided by Albany Finance Department

Project Costs:	$971,600
Less ARA Contributions:	(136,000)
Paid w/ City Funds	835,600
Less Accumulated Depreciation	(30,600)
Book Value	**$ 805,000**

Adding the book values generated in Tables 3 and 4 produces the total amount of distribution system costs eligible for reimbursement fee funding. Existing distribution system costs are assumed to benefit all projected users (exclusive of North Albany) at 20 MGD, producing the following subtotal:

Reimbursement Fee Subtotal: Distribution System

= (Book Value: Original Purchase + Book Value Additions) / (Projected Equivalent Meters, Albany Service Area (exclusive of North Albany) @ 20 MGD)
= ($4,256,500 + $805,000) / 15,945 = **$320**

Reimbursement Fee Subtotal: Distribution System = $320

Treatment plant and equipment costs are assumed to benefit all users of the water system within the water system service area. Table 5 shows the depreciated value of existing land, plant, and equipment for the existing water system.

A project currently underway at the water treatment plant will both upgrade systems at the plant to provide an increased level of performance, as well as increase the processing capacity to 20 MGD. Portions of this project are aimed at increasing the level of performance at the plant, and therefore benefit all users of the system. These costs are spread out to include all 17,866 equivalent meters that benefit from the level of performance improvements. The other portion of the work is aimed solely at increasing the capacity of the plant, and should therefore be allocated only to the projected 4,466 new users of the system. In order to allocate the level of performance portion of this project's cost to all users of the system, and the capacity increasing costs to the new users, a cost ratio is established. These calculations are shown in Table 6.

TABLE 5:
Existing Plant & Equipment Values
Book values from Albany Finance Department.

Land	89,300	
Land Rights	19,800	
Less Accumulated Depreciation	(3,600)	
Book Value: Land & Land Rights		105,500
Buildings	256,400	
Less Accumulated Depreciation	(70,700)	
Book Value: Buildings		185,700
Reservoirs, Dams, Waterways	812,000	
Less Accumulated Depreciation	(154,100)	
Book Value: Reservoirs, Dams, Waterways		657,900
Equipment	2,779,200	
Less Accumulated Depreciation	(1,134,700)	
Book Value: Equipment		1,644,500
Total		$2,593,600

TABLE 6:
Water Plant Improvements Currently Underway
Breakdown of Costs Associated with Level of Performance vs. Capacity Improvements

Ratio of Level of Performance Improvements vs. Capacity Improvements
(from Facility Plan pp. 8-8, Table 8-4):
Upgrade, Phase 1 (15 MGD), Level of Performance: $2,432,000
Expansion, Phase 2 (20 MGD), Capacity: 1,949,000
Total: $4,381,000

Therefore:
Level of performance improvements account for 56% of project cost.
Capacity improvements account for 44% of project cost.

Actual project cost for Phase 1 and 2 improvements at the Water Plant = $4,300,000

Applying the cost ratios, actual costs attributable are:

Level of Performance Improvements: $2,408,000
Capacity Improvements: $1,892,000

Assembling the treatment plant data calculated in Tables 5 and 6, a second subtotal is generated for reimbursement costs attributable to the treatment plant. Treatment plant reliability costs are considered to benefit all projected users within the water service area of the water system, and so will be allocated to the 17,866 equivalent meters projected at a plant processing capability of 20 MGD. Capacity increasing improvements at the plant are considered to benefit only those additional equivalent meters provided by the upgrade to 20 MGD, and will therefore be allocated only to those 4,466 additional meters projected to be served by the upgrade.

Reimbursement Fee Subtotal: Treatment Plant

Existing Treatment Plant and Treatment Plant Level of Performance Improvements Portion:
= (Book Value: Treatment Plant + Level of Performance Improvements) / (Projected Equivalent Meters, Water Service Area @ 20 MGD)
= ($2,593,600 + 2,408,000) / 17,866 = **$280**

Treatment Plant Capacity Portion:
= (Capacity Improvements) / (Projected Additional Equivalent Meters, Water Service Area @ 20 MGD)
= $1,892,000 / 4,466 = **$420**

Combined Total, Treatment Plant = **$700**

Reimbursement Fee Subtotal: Treatment Plant = $700

By adding the two subtotals, the Reimbursement Fee is calculated. Table 7 details the final computation of the Reimbursement Fee.

TABLE 7:
Calculation of Reimbursement Fee

Reimbursement Fee Subtotal: Distribution System	$320
Reimbursement Fee Subtotal: Treatment Plant	$700
Total Water Reimbursement Fee per Equivalent 3/4-Inch Meter	**$1,020**

IMPROVEMENT FEE

House Bill 3224 provides for an Improvement Fee aimed at funding costs for capital improvements to be constructed. Capital projects indicated in the Albany/Millersburg Water System Facility Plan will be utilized to develop the fee. Projects shown in the Facility plan will be updated to current values using the Engineering News Record (ENR) construction cost index.

In calculating this fee, it is assumed that capacity increasing projects benefit solely those users new to the system. Treatment plant improvements will be allocated to the 4,466 additional meters within the water service area projected to be served by the expansion to 20 MGD (see Table 8). Capacity improvements to the distribution system will be allocated solely to the additional 3,986 equivalent meters exclusive of North Albany (see Table 9). In both cases, an adjustment will be made for "level of performance" improvements that are assumed to benefit all users.

Table 8 details costs associated with improvements to the treatment plant, improvements which are considered to benefit all water users within the urban growth boundary. Those projects that are considered level of performance improvements will be reduced by a ratio of the additional equivalent meters at 20 MGD to the total equivalent meters at 20 MGD. This adjustment then allocates the level of performance improvements only to the new users. Capacity improvements at the plant benefit only those new users, so no adjustment is made to those projects which increase the plant capacity. The final total is then allocated to the additional 4,466 equivalent meters within the urban growth boundary projected to be served at a 20 MGD plant processing capability.

Table 9 calculates costs for the distribution system improvements designated in the facility plan. Because these improvements benefit only the Albany users of the system, the adjustment ratio used for level of performance improvements is based on projections for equivalent meters in Albany only. After reducing level of performance projects by this ratio, the final cost is allocated to the projected new equivalent meters within Albany at the plant processing capability of 20 MGD.

TABLE 8:
Proposed Capital Projects - Treatment Plant Improvements
Water Treatment Plant Capital Projects for 20 MGD Demand
Information from Albany/Millersburg Water System Facility Plan pp. 8-22 & 8-23

Item	Estimated Cost	4,466/17,866 of Cost	Capacity Cost
Source			
Willamette River Intake & Pump Station (Stage 1):	1,345,000	336,200	336,200
Raw Water Pipeline (Stage 1):	315,000	78,700	78,700
Treatment Plant Phase 3 (Stage 2):	570,000		570,000
Sludge Disposal Improvements:	350,000	87,500	87,500
TOTAL:	**$2,580,000**		**$1,072,400**

The figures in table 8 were generated in 1988 using a Seattle ENR index of 4746 (see page 5-25, facility plan). The current Seattle ENR index is 4975, so that in order to bring this final total to 1991 dollars, the following computation is made:

$$\$1,072,400 \times (4975/4746) = \$1,124,100$$

This number is then used to calculate the Treatment Plant subtotal for the Improvement Fee:

Improvement Fee Subtotal: Treatment Plant

= Treatment Plant Capacity Costs / Additional Projected Equivalent Meters, Water Service Area @ 20 MGD
= $1,124,100 / 4,466
= **$250**

Improvement Fee Subtotal: Treatment Plant = $250

TABLE 9:
Proposed Capital Projects - Distribution System Improvements
Water Distribution System Capital Projects for 20 MGD Demand
Information from Albany/Millersburg Water System Facility Plan pp. 8-22 & 8-23

Item	Estimated Cost	3,986/15,945 of Cost	Capacity Cost
Pumping			
Hill Street (Stage 2):	100,000		100,000
Transmission Network			
Rehabilitation of Existing Pipelines			
Stage 1:	368,000	92,000	92,000
Stage 2:	840,000	210,000	210,000
Replacements and Completions			
Stage 1:	1,795,000	448,700	448,700
Stage 2:	1,890,000	472,500	472,500
New Pipelines for Expansion			
Stage 1:	464,000		
Stage 2:	430,000		
Less Completed Projects	(805,000)		
	89,000		89,000
Storage			
5 mg Reservoirs,			
Stage 1:	1,550,000	387,500	387,500
Stage 2:	1,550,000	387,500	387,500
TOTALS:	**$8,182,000**		**$2,187,200**

These figures were generated in 1988 using a Seattle ENR index of 4746 (see page 5-25, facility plan). The current Seattle ENR index is 4975, so that in order to bring this final total to 1991 dollars, the following computation is made:

$$\$2,187,200 \times (4975/4746) = \$2,292,700$$

This number is then used to calculate the Distribution System subtotal for the Improvement Fee:

Improvement Fee Subtotal: Distribution System

= Distribution System Capacity Costs / Additional Equivalent Meters, Excluding North Albany @ 20 MGD
= $2,292,700 / 3,986
= **$575**

Improvement Fee Subtotal: Distribution System = $575

By adding the two subtotals, the Improvement Fee is calculated. TABLE 10 details the final computation of the Improvement Fee.

TABLE 10:
Calculation of Improvement Fee

Improvement Fee Subtotal: Distribution System	$575
Improvement Fee Subtotal: Treatment Plant	$250
Total Water Improvement Fee per Equivalent 3/4-Inch Meter	**$825**

Together, the Reimbursement Fee and the Improvement Fee form the maximum system development charge that can be charged for connection to the Albany Water System. Table 11 completes the calculation of the Water System Development Charge.

TABLE 11:
Total SDC Fee (Water System) per Equivalent 3/4-Inch Meter:

Reimbursement Fee	$1,020
Improvement Fee	825
Total Water SDC Fee per Equivalent 3/4-Inch Meter	**$1,845**

SDC Charges: Connection Fee Based on Meter Size

The following factors will be applied to the base system development charge for meter sizes over the base 3/4-inch equivalent meter size to determine connection fees for large meters. These factors represent the ratio of the capacity of the listed meters to the capacity of a 5/8" x 3/4" meter. For multi-unit residential developments on the same meter, the duration of use at maximum capacity is assumed to be proportional to the number of dwelling units. A 2-unit residential unit on a 3/4" meter would thus be charged a factor of two.

Meter Size (Inches)	Factor
3/4	1
1	1.67
1-1/4	2.78
1-1/2	3.33
2	5.33
3	10.67
4	16.67
6	33.33
8	53.33
10	76.67
12	103.33

METHODOLOGY VERSION HISTORY:

VERSION DATE	DESCRIPTION	BY
6/03/91	Original: Adopted by Res. 3072	PJB
7/27/93	1993 Revision: Add Flow Component to Industrial	PJB

EXHIBIT 'B'

SANITARY SEWER SYSTEM

SYSTEM DEVELOPMENT CHARGE METHODOLOGY

CITY OF Albany OREGON

City of Albany, Oregon

City of Albany Sanitary Sewer System System Development Charge Methodology

INTRODUCTION

Sanitary sewer system development charges (SDCs) are developed for the treatment plant and collection system as a whole. The SDC is divided into two categories, as provided by House Bill 3224. The Reimbursement Fee portion is based on an analysis of financial data provided by the Albany Finance Department. Improvement Fee costs are developed from recommended capital project projections found in the Albany Wastewater Facility Plan, Volumes I and II, prepared by CH2M Hill Consulting Engineers (1986), and the North Albany Health Hazard Area Sewer Facility Plan prepared by Brown and Caldwell Consulting Engineers (1990).

The base SDC for the sanitary sewer system is developed from population projections found in the facility plan for estimated design sewered population in the year 2000. Capital projects are included as planned for that time period. The base unit of demand for calculation of the SDC will be an equivalent dwelling unit (EDU). This number is calculated for current populations, and is then projected to anticipate future connections and demand on the overall system.

EQUIVALENT DWELLING UNIT PROJECTIONS

As defined by the Albany Wastewater Facility Plan, an equivalent dwelling unit (EDU) contains 2.43 people per residential metered account. Using this figure and current population figures, along with population projections for the year 2000, EDUs are projected to the year 2000 to coincide with project planning found in the facility plan. These EDU projections are then used to distribute costs associated with the treatment plant and collection system. EDU calculations are shown in Table 1.

TABLE 1:
Calculations of Equivalent Dwelling Units (EDUs)
EDUs based on population projections from Table 3-3, page 3-6, and design rating of 2.43 people per residential metered account, page 2-14, Albany Wastewater Facility Plan, Vol. I.

Equivalent Dwelling Units @ Year 1990=
Year 1990 Population / 2.43 People per Residential Metered Account =
31,600 / 2.43 = **13,000**

Equivalent Dwelling Units @ Year 2000=
Year 2000 Population / 2.43 People per Residential Metered Account =
40,500 / 2.43 = **16,700**

SUMMARY OF CALCULATIONS:

Total Number EDUs, 1990	13,000
Projected Total Number EDUs, 2000	16,700
Additional Number EDUs, 1990 to 2000	3,700

REIMBURSEMENT FEE

As provided by House Bill 3224, a Reimbursement Fee may be established to allocate costs associated with capital improvements already constructed or under construction . This fee is intended to assess new users for the value of unused capacity built into the existing system. In developing this fee, financial information is analyzed to determine the depreciated value of the existing treatment plant and collection system. A percentage of this total is then allocated to new users of the system at the time of connection. In developing the value of the sewer system eligible for reimbursement fee funding, it is acknowledged that additional capacity has been built into the system by the historical construction of trunk lines and treatment plant improvements designed to provide additional capacity for future users.

Reimbursement Fee calculations are shown in Table 2. In developing the final total eligible for reimbursement fee funding, the value of contributed capital and accumulated depreciation recorded to date is deducted from the original construction cost. Contributed capital included in the calculations for the treatment plant includes grants utilized for funding the original construction of the plant. For the collection system, contributed capital includes both grant money and property owner assessments used in funding these capital projects. Because the historical improvements to the sewer system benefit all users, the final total is distributed to all projected users within the planning period (16,700 EDUs at year 2000).

TABLE 2:

Value of Existing System

Book Value of Existing Plant & Equipment from Finance Department. Contributed Capital (Grants & Assessments) from Finance Department. Reimbursement calculations include wastewater plant project currently underway.

Treatment Plant:		
Buildings	2,177,600	
Less Accumulated Depreciation	(688,400)	
Book Value: Buildings		1,489,200
Equipment	1,718,300	
Less Accumulated Depreciation	(971,700)	
Book Value: Equipment		746,600
Phase A & B Improvements	4,314,300	
Less Accumulated Depreciation	(46,500)	
Book Value: Phase A & B Improvements		4,267,800
Land		21,300
Land Improvements	21,700	
Less Accumulated Depreciation	(8,700)	
Book Value: Land Improvements		13,000
SUBTOTAL:		6,537,900
Less Contributed Capital (Grants)		(405,500)
Net Cost		**$6,132,400**
Sewerlines		$8,316,000
Less Contributed Capital (Grants, Assessments)		(7,377,600)
Amount Contributed by City		938,400
Less Accum. Dep. on Amount Contributed by City		(329,500)
Net Cost		**$608,900**
Net Costs Existing Assets		**$6,741,300**

By dividing the net cost for existing assets developed in Table 2 by the total projected benefitting users, the sanitary sewer reimbursement fee is calculated:

Reimbursement Fee: Sanitary Sewer System

= Net Costs Existing Assets / Projected Total EDUs at Year 2000
= $6,741,300/ 16,700
= **$400**

Reimbursement Fee: Sanitary Sewer System = $400

IMPROVEMENT FEE

House Bill 3224 provides for an Improvement Fee aimed at funding costs for capital improvements to be constructed. Improvement fee capital projects are based on Table 5-6, "Recommended Staged Treatment Improvements for improvements to the treatment plant, Albany Wastewater Facility Plan Volume I; Table 5-6, "Recommended Staged Capital Improvement Plan" for improvements to the collection system, Albany Wastewater Facility Plan Volume II; and Table 6-1 "Total Project Cost and Grant Eligible Project Cost" for improvements to the North Albany system, North Albany Health Hazard Area Sewer Facility Plan. Project costs shown in the facility plan are updated to current values using the Engineering News Record (ENR) construction cost index.

Those projects aimed at improving overall system efficiency are allocated to all projected users at year 2000, based on the EDU number for that year. Those projects aimed at increasing system capacity will be allocated solely to the benefitting new users to the system by dividing the improvement costs by the difference between 1990 and 2000 EDUs. Because the treatment plant improvement costs are shown in the facility plan without engineering, administrative, legal, permit, insurance, and mobilization costs (see Table 5-6 Albany Wastewater Facility Plan Volume I), a 20% factor (ELA) will be added to the project costs. Albany and North Albany collection system costs shown in the facility plan include these items. Recommended collection system projects are behind schedule, so Stage I and II implementation is anticipated to be extended to 2000 to coincide with improvements at the treatment plant. Costs associated with the sanitary sewer improvement fee are detailed in Table 3.

The eligible capacity costs from Table 3 were generated in 1986 using a Seattle ENR Index of 4600 (Albany Wastewater Facility Plan, Volume I, page 5-22). The current Seattle Index is 4975, so that in order to bring this final total to 1991 dollars, the following computation is made:

$$\$3,722,700 \times (4975/4600) = \$4,026,200$$

This number is then used to calculate the Improvement Fee for the Sewer System:

Improvement Fee: Sanitary Sewer System

= Eligible Capacity Costs / Projected Additional EDUs Year 1990 to 2000
= $4,026,200 / 3,700
= **$1,100**

Improvement Fee: Sanitary Sewer System = $1,100

TABLE 3:

Proposed Capital Projects

Sewer System capital projects for year 2000 estimated population demand.
Projects from Table 5-6, Volume I, and Table 5-6, Volume II, Albany Wastewater Facility Plan and Table 6-1, North Albany Health Hazard Area Sewer Facility Plan.

Item	Estimated Cost	+ELA	3,700/16,700 of Cost	Capacity Cost
Treatment Plant Improvements				
STAGE C				
Existing Secondary Clarifier Modifications				
Centerwell Modifications	58,000	11,600	15,400	15,400
Provide RAS Chlorination	2,000	400	500	500
Digestion: New Redundant Boiler	148,000	29,600	39,300	39,300
Stage D				
New Grit Removal Addition	145,000	29,000	38,600	38,600
New Primary Clarifier Addition	642,000	128,400	170,700	170,700
New Flow Control Structures	235,000	47,000	62,500	62,500
Existing Aeration Basin Modification				
Flexible Mode	316,000	63,200	84,000	84,000
Smaller Basin Size	32,000	6,400	8,500	8,500
New Chlorine Contact Basin	364,000	72,800	96,800	96,800
New Outfall to Willamette	190,000	38,000	50,500	50,500
Miscellaneous	140,000	28,000	37,200	37,200
Subtotal (Treatment Plant)				604,000
Collection System Improvements				
Stage I				
Cost-effective I/I Removal	4,427,000		980,800	980,800
Existing System Capacity Improvements	1,885,000		417,600	417,600
Stage II				
Existing System Capacity Improvements	2,055,000		455,300	455,300
New Trunk Sewer Extensions	1,265,000			1,265,000
North Albany Improvements	7,292,000			7,292,000
TOTALS	$19,196,000	$454,400		$11,014,700

Projected grant and assessment monies must be deducted from this total prior to calculating the Improvement Fee. The following calculation accomplishes this requirement:

Improvement Fee Capacity Costs	=	$11,014,700
Less: Grants & Assessments	=	(7,292,000)
Improvement Fee Eligible Capacity Costs	=	$3,722,700

Together, the Reimbursement Fee and the Improvement Fee form the maximum system development charge that could be charged for connection to the Albany Sanitary Sewer System. Table 4 completes the calculation of the Sanitary Sewer System Development Charge per equivalent dwelling unit.

Industrial system development charges will be calculated using three alternative system loading methods. Two of these methods, biochemical oxygen demand (BOD) and total suspended solids (TSS) are assumed to impact the treatment process only. Therefore, the portions of the reimbursement and improvement fee which are attributable to the collections system only will be removed from the SDC fee calculations for these two methods. This is accomplished in TABLE 4A.

TABLE 4:
Total SDC Fee (Sewer System) per EDU:

Reimbursement Fee:	$ 400
Improvement Fee:	1,100
Total Sanitary Sewer Fee per EDU:	**$1,500**

TABLE 4A:
Total SDC Fee (Sewer System) per EDU, Industrial BOD & TSS Methods:

Attributable Dollars:	
Reimbursement Fee	$6,132,400
Improvement Fee (Updated to ENR)	$ 604,000
Reimbursement Fee (BOD & TSS Methods)	$6,132,400/16,700 = $370
Improvement Fee (BOD & TSS Methods)	$604,000/3,700 = $160
Total Sanitary Sewer Fee per EDU (BOD & TSS Methods)	$525

Commercial and industrial users have different system use characteristics than residential users. In order to make allowances for these differences, an adjustment will be made to the base system development charge as calculated for equivalent dwelling units. For commercial users, the fee will be based on fixture units. For commercial users, a standard number of fixtures per equivalent dwelling unit is developed in TABLE 5, using figures found in the 1980 United States Census.

Industrial user system development charges will be calculated based on the higher of three alternative methods. Biochemical oxygen demand (BOD), total suspended solids (TSS), and flow figures are developed in TABLE 6, which equates each of these parameters to an equivalent dwelling unit. Base loadings used in these calculations can be found on page 2-14, Wastewater Facility Plan, Volume I. In addition, a peaking factor adjustment is made for the flow element to account for industrial flow characteristics.

TABLE 5:

Calculation of Fixtures Per Equivalent Dwelling Unit

Based on 1980 Census figures for Owner-occupied housing units in Albany.

Type	No. Units	No. Fixtures	Total Fixtures
1/2 Bath	17	3	51
Full Bath	2,615	4	10,460
Full Plus 1/2 Bath	1,176	6	7,056
2 or More Full Bath	1,933	8	15,464
Total	5,741		33,031

Average Number of Fixtures Per Equivalent Dwelling Unit = 6

SDC charge per Fixture = $1,500 / 6 = $250

TABLE 6:

BOD & TSS per Equivalent Dwelling Unit

Base Loadings from page 2-14, Wastewater Facility Plan

Base BOD = (0.217 lb/capita/day) x (2.43 people/EDU) = **0.5273 lb/EDU/day**

Base TSS = (0.194 lb/capita/day) x (2.43 people/EDU) = **0.4714 lb/EDU/day**

Base Flow = (73 gal/capita/day) x (2.43 people/EDU) = 177 gal/EDU/day

$$\text{Peaking Factor Adjustment} = \frac{\text{Residential Peaking Factor}}{\text{Heavy Industrial Peaking Factor}}$$

$$= \frac{4.5}{1.8} = 2.50$$

Base Flow per EDU x Peaking Factor Adjustment = Flow per EDU:Industrial

177 gal/EDU/day x 2.50 = **442.5 gal/EDU/Day (Industrial)**

Table 7 utilizes the data computed in Tables 4, 4A, 5 & 6 to produce the three methods used in calculating the sanitary sewer system development charge for residential, commercial and industrial users.

TABLE 7:
Calculation of Fees

Sanitary Sewer reimbursement and improvement fees are based on an Equivalent Dwelling Unit (EDU). One EDU is equal to a single-family residence.

Base Systems Development Charge per EDU:

Reimbursement Fee:	$ 400
Improvement Fee:	1,100
Total Fee:	**$1,500**

Base Systems Development Charge per Industrial EDU (BOD & TSS Methods):

Reimbursement Fee:	$ 365
Improvement Fee:	160
Total Fee:	**$ 525**

Residential and Multi-family Development:

The system development charge for Single-family residences is $1,500.
The system development charge for Multi-family residences is $1,500 per dwelling unit.

Percentages of the total sewer system development charge proportionate to the reimbursement and improvement fees developed for the base charge are then allocated to the Reimbursement and Improvement Fee Funds.

Commercial Development:

For Commercial Development, the fee is determined by the following method:

$1,500 for the first six fixtures, and $250 for each additional fixture.

Recreational vehicle (RV) park system development charges are calculated based upon an assignment of three plumbing fixtures per RV pad or space.

Percentages of the total sewer system development charge proportionate to the reimbursement and improvement fees developed for the base charge are then allocated to the Reimbursement and Improvement Fee Funds.

TABLE 7 (CONTINUED):

Industrial Development:

For Industrial Development, the fee is determined by one of the following methods, and the **highest** of the three methods used. Percentages of the total sewer system development charge proportionate to the reimbursement and improvement fees developed for the base charge (for Method 3) or the base industrial charge (for Method 1 or 2) are then allocated to the Reimbursement and Improvement Fee Funds.

METHOD 1: The customer's estimated daily average biochemical oxygen demand (BOD) discharge in pounds per day for the two highest weeks in a calendar year divided by base BOD (0.5273 lb/EDU/day) giving number of EDUs. Number of EDUs then multiplied by $525 resulting in Total System Development Charge.

METHOD 2: The customer's estimated daily average total suspended solids (TSS) discharge in pounds per day for the two highest weeks in a calendar year divided by base TSS (0.4714 lb/EDU/day) giving number of EDUs. Number of EDUs then multiplied by $525 resulting in Total System Development Charge..

METHOD 3: The customer's estimated daily average total flow in gallons per day for the highest two weeks in a calendar year divided by base industrial flow (442.5 gal/EDU/Day) giving number of EDUs. Number of EDUs then multiplied by $1,500 resulting in Total System Development Charge.

The wastewater loading for new high-strength industrial users should be monitored or sampled after normal operating conditions for the user are reached. At that point, the Systems Development Charges may be recalculated based on the actual loadings and an adjusted payment (or refund) may be made.