APPENDIX F4 - 2019 SYSTEM DEVELOPMENT CHARGE UPDATE

Presented by:

DONOVAN enterprises, inc.

May

2019

Water, Wastewater, Stormwater, Transportation, and Parks System Development Charge Update

Final Report

Prepared for:

CITY OF SILVERTON OREGON'S GARDEN CITY

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City of Silverton
2019 Water, Wastewater, Stormwater, Transportation, and Parks
SDC Methodology Update

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Introduction/History of the Project

The City of Silverton conducts periodic updates to its Comprehensive Plan and its various Public Facility Plans to provide orderly and sustainable growth of municipal infrastructure. A key component to funding these public facilities is the system development charge (SDC) program. SDCs are one-time charges for new development—designed to recover the costs of infrastructure capacity needed to serve new development. This section describes the policy context and project scope upon which the body of this report is based. It concludes with a numeric overview of the calculations presented in subsequent sections of this report for water, wastewater, stormwater, transportation, and parks SDCs.

The city's current schedule of SDCs were last reviewed in May of 2013. In January of 2019, the City hired Donovan Enterprises, Inc. to review and update the water, wastewater, stormwater, parks, and transportation SDC methodologies. With this review and update, the City has stated a number of objectives:

- Review the basis for charges to ensure a consistent methodology;
- Address specific policy, administrative, and technical issues which had arisen from application of the existing SDCs;
- Determine the most appropriate and defensible fees, ensuring that development is paying its way;
- Consider possible revisions to the structure or basis of the charges which might improve equity or proportionality to demand;
- Provide clear, orderly documentation of the assumptions, methodology, and results, so that City staff could, by reference, respond to questions or concerns from the public.

This report provides the documentation of that effort, and was done in close coordination with City staff and available facilities planning documents. The SDC updates comply with Silverton Municipal Code chapter 13.70.

Table 1 gives a component breakdown for the current and proposed residential equivalent SDCs for water, wastewater, stormwater, transportation, and parks.

Table 1 - Component Breakdown of the Proposed Residential Equivalent SDCs

Line Item Description	Service Unit	Proposed	Current	Difference
Water:	per 3/4" water meter			
Reimbursement fee		$1,357	$1,475	$ (118)
Improvement fee		6,534	4,166	2,368
Administration fee @5%		395	-	395
Total		$8,286	$5,641	$2,645
Wastewater:	per 3/4" water meter			
Reimbursement fee		$1,517	$2,031	$ (514)
Improvement fee		2,914	3,084	(170)
Administration fee @ 5%		222	-	222
Total		$4,653	$5,115	$ (462)
Stormwater:	per Equivalent Residential Unit			
Reimbursement fee		$457	$331	$126
Improvement fee		379	567	(188)
Administration fee @ 5%		42	-	42
Total		$877	$898	$ (21)
Transportation:	per detached SF residence			
Reimbursement fee		$633	$688	$ (55)
Improvement fee		2,948	3,408	(460)
Administration fee @ 5%		179	-	179
Total		$3,760	$4,096	$ (336)
Parks:	per detached SF residence			
Reimbursement fee		$ -	-	$ -
Improvement fee		5,942	5,068	874
Administration fee @ 5%		297	-	297
Total		$ 6,240	$ 5,068	$1,172
Total SDCs:				
Reimbursement fee		$3,964	4,525	$ (561)
Improvement fee		18,717	16,293	2,424
Administration fee @ 5%		1,135	-	1,135
Total		$ 23,816	$ 20,818	$ 2,998

Analytical Process for the Methodology Updates

The essential ingredient in the development of an SDC methodology is valid sources of data. For this project, the consultant team has relied on a number of data sources. The primary sources have been the newly formulated and adopted capital improvement plans for water, wastewater, stormwater, and transportation. We have supplemented these data sources with City utility billing records, certified census data, and other documents that we deemed helpful, accurate, and relevant to this study. Table 2 contains a bibliography of the key documents/sources that we relied upon to facilitate our analysis and hence the resulting SDCs.

Table 2 - Data Sources for the Calculation of SDCs

Service	Master Plan Document and/or Corroborating Source Documentation
Water	• City of Silverton water system twenty-year capital improvement plan, March, 2018; City of Silverton Public Works Department • City of Silverton Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2018 • City of Silverton Water System Fixed Asset Schedule; June 30, 2018; City Records • City of Silverton Water System Construction Work in Progress Balances Work Papers; June 30, 2018; City Records • City of Silverton Utility Billing records for fiscal 2017-18 • Water meters in service per City Staff; effective January 31, 2019
Wastewater	• City of Silverton wastewater system twenty-year capital improvement plan, March, 2018; City of Silverton Public Works Department • City of Silverton Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2018 • 2015 – 18 Discharge Monitoring Reports; City of Silverton • Silverton wastewater system fixed asset schedule; June 30, 2018; City records • City of Silverton Utility Billing System – wastewater system active accounts and Equivalent Dwelling Units in service report; June, 2018 • Portland State University, College of Urban Affairs, Population Research Center; Certified census for Silverton, Oregon; June, 2018
Stormwater	• City of Silverton stormwater system twenty-year capital improvement plan, March, 2018; City of Silverton Public Works Department • City of Silverton Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2018 • City of Silverton Comprehensive Plan; land inventory by land use designations; August 6, 2014 • Silverton stormwater system fixed asset schedule; June 30, 2018; City records
Transportation	• City of Silverton transportation system twenty-year capital improvement plan, March, 2018; City of Silverton Public Works Department • City of Silverton transportation system fixed asset schedule; June 30, 2018; City records • U.S. Bureau of the Census; American Community Survey: ✓ City of Silverton dwelling units; 2018 estimated ✓ City of Silverton number of employees; 2018 estimated • Trip Generation Manual; Institute of Transportation Engineers; 9th Edition
Parks	• City of Silverton Parks & Trails Master Plan, adopted September, 2008 • City of Silverton parks system fixed asset schedule; June 30, 2018; City records • U.S. Bureau of the Census; American Community Survey: ✓ City of Silverton population; 2018 estimated ✓ City of Silverton dwelling units; 2018 estimated ✓ City of Silverton number of employees; 2018 estimated • Oregon Department of Parks and Recreation; A guide to Community Park and Recreation Planning for Oregon Communities; April, 2013 • City of Silverton Parks CIP; December 1. 2008

The data sources shown in Table 2 were used to formulate the two (2) components of the SDCs. These components are the reimbursement and improvement fees. The City has been constructing the SDCs

with these two components for over twenty years, and our analysis does not propose to change that methodology. A brief definition of the two components are:

- *The reimbursement fee* considers the cost of existing facilities, prior contributions by existing users of those facilities, the value of the unused/available capacity, and generally accepted ratemaking principles. The objective is future system users contribute no more than an equitable share to the cost of existing facilities. The reimbursement fee can be spent on capital costs or debt service related to the systems for which the SDC is applied.
- *The improvement fee* portion of the SDC is based on the cost of planned future facilities that expand the system's capacity to accommodate growth or increase its level of performance. In developing an analysis of the improvement portion of the fee, each project in the respective service's capital improvement plan is evaluated to exclude costs related to correcting existing system deficiencies or upgrading for historical lack of capacity. An example is a facility which improves system capacity to better serve current customers. The costs for this type of project must be eliminated from the improvement fee calculation. Only capacity increasing/level of performance costs provide the basis for the SDC calculation. The improvement SDC is calculated as a function of the estimated number of additional equivalent residential units to be served by the City's facilities over the planning period. Such a fee represents the greatest potential for future SDC changes. The improvement fee must also provide a credit for construction of a qualified public improvement.

SDC Legal Authorization and Background

SDCs are authorized by Oregon Revised Statute (ORS) 223.297-314. The statute is specific in its definition of system development charges, their application, and their accounting. In general, an SDC is a one-time fee imposed on new development or expansion of existing development, and assessed at the time of development approval or increased usage of the system. Overall, the statute is intended to promote equity between new and existing customers by recovering a proportionate share of the cost of existing and planned/future capital facilities that serve the developing property. Statute further provides the framework for the development and imposition of SDCs and establishes that SDC receipts may only be used for capital improvements and/or related debt service.

Finally, two cost basis adjustments are potentially applicable to both reimbursement and improvement fees: fund balance and compliance costs. In this study, the project team as paid attention to this detail to align future infrastructure costs to those responsible for paying those costs. The reasons for this attention are as follows:

- *Fund Balances* - To the extent that SDC revenue is currently available in fund balance, that revenue should be deducted from its corresponding cost basis. For example, if the city has wastewater improvement fees that it has collected but not spent, then those unspent improvement fees should be deducted from the wastewater system's improvement fee cost basis to prevent charging twice for the same capacity.
- *Compliance Costs* - ORS 223.307(5) authorizes the expenditure of SDCs on "the costs of complying with the provisions of ORS 223.297 to 223.314, including the costs of developing system development charge methodologies and providing an annual accounting of system development charge expenditures." To avoid spending monies for compliance that might otherwise have been spent on growth-related projects, this report includes an estimate of compliance costs in its SDCs.

Reimbursement Fee Methodology

The reimbursement fee represents a buy-in to the cost, or value, of infrastructure capacity within the existing system. Generally, if a system were adequately sized for future growth, the reimbursement fee might be the only charge imposed, since the new customer would be buying existing capacity. However, staged system expansion is needed, and an improvement fee is imposed to allocate those growth-related costs. Even in those cases, the new customer also relies on capacity within the existing system, and a reimbursement component is warranted.

In order to determine an equitable reimbursement fee to be used in conjunction with an improvement fee, two points should be highlighted. First, the cost of the system to the City's customers may be far less than the total plant-in-service value. This is due to the fact that elements of the existing system may have been contributed, whether from developers, governmental grants, and other sources. Therefore, the net investment by the customer/owners is less. Second, the value of the existing system to a new customer is less than the value to an existing customer, since the new customer must also pay, through an improvement fee, for expansion of some portions of the system.

The method used for determining the reimbursement fee accounts for both of these points. First, the charge is based on the net investment in the system, rather than the gross cost. Therefore, donated facilities, typically including local facilities, and grant-funded facilities, would be excluded from the cost basis. Also, the charge should be based on investments clearly made by the current users of the system, and not already supported by new customers. Tax supported activities fail this test since funding sources have historically been from general revenues, or from revenues which emanate, at least in part, from the properties now developing. Second, the cost basis is allocated between used and unused capacity, and, capacity available to serve growth. In the absence of a detailed asset by asset analysis, it is appropriate to allocate the cost of existing facilities between used and available capacity proportionally based on the forecasted population growth as converted to equivalent dwelling units over the planning period. This approach reflects the philosophy, consistent with the City's Updated Master Plans, that facilities have been sized to meet the demands of the customer base within the established planning period.

Improvement Fee Methodology

There are three basic approaches used to develop improvement fee SDCs: "standards driven", "improvements-driven", and "combination/hybrid" approaches. The "standards-driven" approach is based on the application of Level of Service (LOS) standards for facilities. Facility needs are determined by applying the LOS standards to projected future demand, as applicable. SDC-eligible amounts are calculated based on the costs of facilities needed to serve growth. This approach works best where level of service standards has been adopted but no specific list of projects is available. The "improvements-driven" approach is based on a specific list of planned capacity increasing capital improvements. The portion of each project that is attributable to growth is determined, and the SDC-eligible costs are calculated by dividing the total costs of growth-required projects by the projected increase in projected future demand, as applicable. This approach works best where a detailed master plan or project list is available and the benefits of projects can be readily apportioned between growth and current users. Finally, the combination/hybrid-approach includes elements of both the "improvements driven" and "standards-driven" approaches. Level of Service standards may be used to create a list of planned capacity-increasing projects, and the growth required portions of projects are then used as the basis for determining SDC eligible costs. This approach works best where levels of service have been identified and the benefits of individual projects are not easily apportioned between growth and current users.

In the past, the City has utilized the "improvements-driven" approach for the calculation of SDCs. This study continues to use this method, and has relied on the capital improvement plans that are incorporated in the master plans, and plan updates for the water, wastewater, stormwater, parks, and transportation systems.

For this SDC methodology update, the improvement fee represents a proportionate share of the cost to expand the systems to accommodate growth. This charge is based on the newly adopted capital improvement plans established by the City for the municipal services. The costs that can be applied to the improvement fees are those that can reasonably be allocable to growth. Statute requires that the capital improvements used as a basis for the charge be part of an adopted capital improvement schedule, whether as part of a system plan or independently developed, and that the improvements included for SDC eligibility be capacity or level of service expanding. The improvement fee is intended to protect existing customers from the cost burden and impact of expanding a system that is already adequate for their own needs in the absence of growth.

The key step in determining the improvement fee is identifying capital improvement projects that expand the system and the share of those projects attributable to growth. Some projects may be entirely attributable to growth, such as a wastewater collection line that exclusively serves a newly developing area. Other projects, however, are of mixed purpose, in that they may expand capacity, but they also improve service or correct a deficiency for existing customers. An example might be a water distribution reservoir that both expands water storage capacity and corrects a chronic capacity issue for existing users. In this case, a rational allocation basis must be defined.

The improvement portion of the SDC is based on the proportional approach toward capacity and cost allocation in that only those facilities (or portions of facilities) that either expand the respective system's capacity to accommodate growth or increase its respective level of performance have been included in the cost basis of the fee. As part of this SDC update, City Staff and their engineering consultants were asked to review the planned capital improvement lists in order to assess SDC eligibility. The criteria in Figure 1 were developed to guide the City's evaluation:

Figure 1 - SDC Eligibility Criteria

City of Silverton

Steps Toward Evaluating

Capital Improvement Lists for SDC Eligibility

ORS 223

1. Capital improvements mean the facilities or assets used for:
    a. Water supply, transmission, storage and distribution
    b. Wastewater collection, transmission, treatment, and disposal
    c. Stormwater, conveyance, detention, treatment, and disposal
    d. Parks, open space, and trails/connections
    e. Transportation – intersection improvements, street reconstruction and widening, roadway enhancement, and bike/ped expansion

    This definition DOES NOT ALLOW costs for operation or routine maintenance of the improvements;
2. The SDC improvement base shall consider the cost of projected capital improvements needed to increase the capacity of the systems to which the fee is related;
3. An increase in system capacity is established if a capital improvement increases the "level of performance or service" provided by existing facilities or provides new facilities.

Under the City' approach, the following rules will be followed

1. Repair costs are not to be included;
2. Replacement costs will not be included unless the replacement includes an upsizing of system capacity and/or the level of performance of the facility is increased;
3. New regulatory compliance facility requirements fall under the level of performance definition and should be proportionately included;
4. Costs will not be included which bring deficient systems up to established design levels.

In developing the improvement fee, the project team in consultation with City staff evaluated each of its CIP projects to exclude costs related to correcting existing system deficiencies or upgrading for historical lack of capacity. Only capacity increasing/level of performance costs were used as the basis for the SDC calculation, as reflected in the capital improvement schedules developed by the City. The improvement fee is calculated as a function of the estimated number of projected additional Equivalent Residential Units for water, wastewater, stormwater, and parks over the planning horizon. We measure demand for transportation facilities in PM peak-hour vehicle trips (PM PHVTs). One PM PHVT represents one person beginning or ending a vehicular trip at a certain property during the afternoon rush hour. Once the future costs to serve growth have been segregated (i.e., the numerator), they can be divided into the

total number of new EDUs (and PM PHVT's) that will use the capacity derived from those investments (i.e., the denominator).

Methodology for the Granting of Credits, Discounts, and Exemptions

SDC Credits Policy

ORS 223.304 requires that credit be allowed for the construction of a "qualified public improvement" which is required as a condition of development approval, is identified in the Capital Improvement Plan, and either is not located on or contiguous to property that is the subject of development approval, or is located on or contiguous to such property and is required to be built larger or with greater capacity than is necessary for the particular development project. The credit for a qualified public improvement may only be applied against an SDC for the same type of improvement, and may be granted only for the cost of that portion of an improvement which exceeds the minimum standard facility size or capacity needed to serve the particular project. For multi-phase projects, any excess credit may be applied against SDCs that accrue in subsequent phases of the original development project. In addition to these required credits, the City may, if it so chooses, provide a greater credit, establish a system providing for the transferability of credits, provide a credit for a capital improvement not identified in the Capital Improvement Plan, or provide a share of the cost of an improvement by other means.

The City has adopted a policy for granting SDC credits, and has codified this policy in the Silverton Municipal Code (MMC) §13.70.120. The adopted SDC credit policy consists of the following items:

MMC §13.70.120

A. A system development charge shall be imposed when a change of use of a parcel or structure occurs, but credit shall be given for the computed system development charge to the extent that prior structures existed and services were established on or after the effective date of the ordinance codified in this chapter. The credit so computed shall not exceed the calculated system development charge. No refund shall be made on account of such credit.

B. A credit shall be given to the permittee/developer for qualified public improvements required to be built as capacity-increasing capital facilities with greater capacity than is necessary for the particular development project, as defined in ORS 223.307. The credit shall apply only for the portion of the improvement that exceeds the city's minimum standard facility size or capacity needed to serve the development, including all future phases or adjacent properties with common ownership. In no case shall credits be given for more than the over-capacity portion of a public improvement required as part of the development approval.

C. The applicant shall have the burden of demonstrating that a particular improvement qualifies for credit under this subsection. The credit shall not exceed the improvement fee and shall require acceptance of the public improvement and receipt of written confirmation thereof from the city manager or designee.

D. The request for credit for a qualified public improvement shall be filed with the city manager, or his designee, not later than 60 days after approval of the development by the city. The request shall include:

    1. A legal description of all land within the development;

    2. A legal description of any land proposed to be donated as part of the qualified public improvement;

3. A written appraisal of the fair market value of donated lands which are a part of the qualified public improvement. The appraisal shall be prepared by a certified professional appraiser and based upon comparable sales of similar property between unrelated parties;
4. A detailed written estimate of proposed construction costs for each qualified public improvement, prepared by a professional engineer. The estimate shall include separate costs for that portion of each improvement that exceeds the city's minimum standard facility size or capacity;
5. If the qualified public improvement is not currently on the city's capital improvement plan, a statement requesting the addition of the improvement onto the plan shall be made in writing
6. The signatures of all legal owners of the development property together with the designation of who is to receive any credits and the designated percentage for each, if more than one person or entity is designated.

E. When the construction of a qualified public improvement located in whole or in part or contiguous to the property that is the subject of development approval gives rise to a credit amount greater than the improvement fee that would otherwise be levied against the project, the credit in excess of the improvement fee for the original development project may be applied against improvement fees that accrue in subsequent phases of the original development project.

F. Credits shall not be transferable from one development to another.

G. Credits shall not be transferable from one type of system development charge to another.

H. Credits shall be used within 10 years from the date the credit is given.

I. Where a public improvement qualifies for both credits for system development charges from the city and reimbursement from such other property owners receiving service from the improvement pursuant to Chapter 12.08 SMC, the developer shall only be entitled to a combined total redeemed credit and reimbursement amount not greater than the total qualified public improvement cost.

J. Where a public improvement qualifies for both credits pursuant to this section and reimbursement pursuant to Chapter 12.08 SMC, the city shall assume any right for reimbursement for any credits redeemed by a developer for that portion of the improvement up to and including the city standard for size or capacity.

SDC Discount Policy

The City, at its sole discretion may discount the SDC rates by choosing not to charge a reimbursement fee for excess capacity, or by reducing the portion of growth-required improvements to be funded with SDCs. A discount in the SDC rates may also be applied on a pro-rata basis to any identified deficiencies, which must to be funded from sources other than improvement fee SDCs. The portion of growth-required costs to be funded with SDCs must be identified in the CIP. Because discounts reduce SDC revenues, they increase the amounts that must come from other sources, such as user fees or general fund contributions, in order to acquire the facilities identified in the Updated Master Plan(s).

Partial and Full SDC Exemption

The City may exempt certain types of development, from the requirement to pay SDCs. Exemptions reduce SDC revenues and, therefore, increase the amounts that must come from other sources, such as user fees and property taxes. As in the case of SDC credits, the City has articulated a policy relative to partial and full SDC exemption. This SDC exemption policy is codified in SMC §13.70.110, and is as follows:

A. Structures and uses established and existing on or before the effective date of the ordinance codified in this chapter are exempt from a system development charge, to the extent that such structures and uses are not altered, added to, replaced, or changed in use so as to increase demands on any capital improvement for which systems development charges are imposed.

B. Additions to single-family dwellings that do not constitute the addition of a dwelling unit, as defined by the State Uniform Building Code, are exempt from all portions of the system development charge.

C. An alteration, addition, replacement or change in use that does not increase the parcel's or structure's use of the capital improvement facility is exempt from all portions of the system development charge.

D. A project financed by City revenues is exempt from all portions of the system development charge.

Water SDCs

Water Capital Improvement Plan

The principal source document for the water capital improvement plan (CIP) was the 2018 twenty (20) year Water System Capital Improvement Plan. For this water SDC methodology update, the 2018 water CIP was reviewed for accuracy with City Staff and where appropriate amended. This amendment process consisted of two steps. The first step was to eliminate master plan projects that City Staff deemed unnecessary at the current time due to the very long lead times anticipated for their development. The second step in the CIP amendment process was to eliminate the cost of planned projects (or portions of projects) that have been funded and constructed since the adoption of the last water master plan in 2011. In this case, the planned future costs are deducted from the CIP. The actual costs spent on these projects were capitalized by the City, and now reside in the water system fixed asset inventory (i.e., balance sheet assets). These historical costs will be included in the reimbursement fee calculations.

The amended water system CIP now consists of future projects that remain a 20-year priority for the City, and only consists of projects yet to be completed. The resulting CIP that was used for this SDC methodology update is shown in summary form in Table 3.

Table 3 – Adopted 2016 Water System Capital Improvement Plan

1-5 Year Water Project Summary

Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible
		Priority 1 Improvements						
A1.1	McClaine Street	Replace water services and fire hydrants from Main to C Stret	High	2019	2019	0%	$ 100,000.00	$ -
A1.2	WTP #1 Trident	Replace WTP #1 with new Trident packaged system.	High			?	$ 4,000,000.00	$ -
A1.3	Silver Creek Raw Water Intake	New Intake Pump Station, 1750lf of 18" DI	High			56%	$ 2,500,000.00	$ 1,400,000.00
1A.4	New 2 MG Storage Tank and Booster Pump (not including year 6-20 costs $2,065,000	Emergency and operational storage for west side of city	High			80%	$ 3,500,000	$ 2,800,000.00
1A.5	Master Plan Update	WTP, pump stations, ARV, distribution system, and reservoirs.	High			100%	$ 35,000	$ 35,000.00

6-20 Year Water Project Summary

Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible
		Priority 1 Improvements						
1B	Transmission to West Plateau Service Area	Eliminate supply vulnerability of west upeer service area. Provides higher fire flows.		TBD		30%	$ 715,000	$ 214,500
1C	Silver Creek Plaza Area Improvements	Improved fire flow, transmission, and hydrant coverage.		TBD		0%	$ 626,000	$ -
1D	Western Avenue Improvements	Secondary supply source to High School. Improved fire flow, transmission, and hydrant coverage.		TBD		0%	$ 260,000	$ -
1E	Breyonna Way Loop	Closes loop in WTP PRV zone. Improved fire flow transmission, and redundancy.		TBD		0%	$ 44,000	$ -
1F	N 3rd Street Improvements	Improved fire flow and hydrant coverage in commercially zoned areas.		TBD		0%	$ 201,000	$ -
1H	Kent Street and Sweden Circle	Improved fire flow and system looping for WTP PRV zone.		TBD		0%	$ 47,000	$ -
1I	Woodland Dr. NE and Oregon Garden/Relocate BF Valve on Oregon Garden	Eliminates vulnerability of single line feet to Oregon Garden. Relocation of backflow prevention on Garden line addresses fire flow issues.		TBD		0%	$ 258,000	$ -
1J	Hobart Road Improvements from N. 2nd to Hwy 214.	Improved fire flow, transmission, and hydrant coverage.		TBD		23%	$ 270,000	$ 62,100
1K	New High Level Pumphouse	Energy savings, increased pump capacity, upgrade old equipment, provide backup power.		TBD		60%	$ 841,000	$ 504,600

Table 3 – Adopted 2016 Water System Capital Improvement Plan (Continued)

6-20 Year Water Project Summary								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible
		Priority 2 Improvements						
2A	N 2nd Street Improvements	Hobart to TJ Lane - Improved fire flow, future transmission corridor, replaces asbestos line.		TBD		13%	$ 391,000	$ 50,830
2B	Barger, Madison, & Cowing Improvements	Cowing to Smith - Improved fire flow, transmission, and hydrant coverage. Replaces undersized lines.		TBD		0%	$ 535,000	$ -
2C	Fiske Street Improvements	Main to Coolidge - Improved fir flow and hydrant coverage. Replaces undersized lines.		TBD		0%	$ 260,000	$ -
2D	Industry Way Improvements	Loop though City Shops - Improved fire flow, pressure and circulation at City Shops		TBD		0%	$ 324,000	$ -
2E	Pioneer and Evans Valley Improvements	Reserve to Crestview - Improved fire flow, pressure, circulation and future transmission. Eliminates vulnerabilitof single feed to WTP PRV Zones.		TBD		26%	$ 104,000	$ 27,040
2F	Oak Street Improvements	Norway to Monitor Rd. - Improved transmission in the clearwell zone. Improves pressure for connections in the WTP PRV zone. Improved fire flow.		TBD		40%	$ 523,000	$ 209,200
2G	Industrial Area Improvements	Hobart to Monitor Rd. - Loop connection. Improved fire flow and future transmission.		TBD		23%	$ 443,000	$ 101,890
2H	Main, 5th, Kent, and Rock Improvements	Oak to Reserve - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 569,000	$ -
2I	Well and Orchard Improvements	Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 267,000	$ -
2J	Extend service to future park	Hawk Drive - Future water service to park.		TBD		0%	$ 35,000	$ -
2K	Future 2MG Tank	WTP Site - Provide for future storage needs.		TBD		45%	$ 3,843,000	$ 1,729,350
2L	Lewis Street Improvements	Water to 3rd - Improved fire flow, pressure, and circulation.		TBD		0%	$ 348,000	$ -
2M	Water Street Improvements	Ike Mooney to City Limits - Improved fire flow, pressure, circulation and future transmission.		TBD		14%	$ 1,038,000	$ 145,320
2N	Pine Street Improvements	James to Brown - Improved fire flow, circulation, transmission, and hydrant coverage.		TBD		15%	$ 162,000	$ 24,300
2O	Keene, Ash, and Edgwood Improvements	Ross to Weiby - Improved fire flow, pressure, circulation and hydrant coverage.		TBD		0%	$ 465,000	$ -
2P	High Level Tank Improvements	High Level Site - New improvements and maintenance.		TBD		0%	$ 323,000	$ -
2Q	WTP Upgrades	Replacement of plant #1		TBD		9%	$ 11,900,000	$ 1,071,000

Table 3 – Adopted 2016 Water System Capital Improvement Plan (Continued)

6-20 Year Water Project Summary								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible
		Priority 3 Improvements						
3A	Setnes St. Quarry Ave. and Lanham Lane	Improved fire flow, pressure, circulation, and hydrant coverage	Low	TBD		7%	$ 1,267,000	$ 88,690
3B	Meridian Road NE	Improved fire flow, pressure, circulation, and hydrant coverage	Low	TBD		100%	$ 5,000	$ 5,000
3C	Commerce Court and Industrial Way	Improved fire flow, pressure, circulation, and hydrant coverage	Low	TBD		100%	$ -	$ -
3D	N. 1st Street	Jefferson to Hobart - Improved fire flow, pressure, circulation, and hydrant coverage.	Low	TBD		14%	$ 300,000	$ 42,000
3E	Northwest 12" Loop	Hobart to Pine -Improved fire flow, pressure, cirulation, and hydrant coverage.		TBD		100%	$ 189,000	$ 189,000
3F	Pine Street	April Lane to Airport Road - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		15%	$ 661,000	$ 99,150
3G	West 12"	Pine Street to Silverton Road - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		100%	$ 89,000	$ 89,000
3H	Clearwell Pressure Zone Loop	Westfield to Railway Avenue - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		100%	$ 75,000	$ 75,000
3I	10" Connection	Safeway to Fire Dept. - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		14%	$ 61,000	$ 8,540
3J	Transmission	New PRV to Anderson - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		14%	$ 1,711,000	$ 239,540
3K	Cherry Street	Phelps to Welch Street - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 66,000	$ -
3L	James Street	Wester to Pine - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		13%	$ 395,000	$ 51,350
3M	Loop Line around Schlador Campus	Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		100%	$ -	$ -
3N	N 2nd Street	C Street tp TJ Lane - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		5%	$ 562,000	$ 28,100
3O	N. 1st street and Front Street	A to C - Improved fire flow, pressure, circulation, and hydrant coverage	High	2015	2020	0%	$ 180,000	$ -
3P	N 2nd Street	Main to B Street - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 262,000	$ -

Table 3 – Adopted 2016 Water System Capital Improvement Plan (Continued)

6-20 Year Water Project Summary								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible
			Priority 3 Improvements					
3Q	Water Street & Brown	Peach to Brown and Webb to Schlador Street - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		16%	$ 1,677,000	$ 268,320
3R	Anderson PRV Loop	Westfield/Center to Westfield/Main - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		100%	$ 94,000	$ 94,000
3S	Pioneer Drive	Crestview to Oak - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		100%	$ 86,000	$ 86,000
3T	Pioneer Drive	Shookum/Eastview to Evans Valley Road - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		100%	$ 66,000	$ 66,000
3U	Eastview Lane	Tillicum to Reservoir - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 337,000	$ -
3V	Booster and extension.	Eastview to Booster area - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		100%	$ 110,000	$ 110,000
3W	Hawk Dr. and Ike Mooney Road	Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		100%	$ 14,000	$ 14,000
3X	Extension to Silverton Mobile Estates	Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 282,000	$ -
3Y	Sunset Lane	Victor Point to Edison - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		100%	$ -	$ -
3Z	Mobile Home Loop	High School to Pine Street - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 189,000	$ -
3AA	Roinson Street and Church Street	Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 214,000	$ -
3BB	Norway Street	Chadwick to Oak - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 131,000	$ -
3CC	Kent Street	E Park to N Ames - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 112,000	$ -
3DD	Maple Street	Grant to Water - Improved fire flow, pressure, circulation, and hydrant coverage.		TBD		0%	$ 150,000	$ -

Table 3 – Adopted 2016 Water System Capital Improvement Plan (Continued)

6-20 Year Dam and Deffered Maintenance Work								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2013 $)	SDC Eligible
Replacements, Differed Maintenance, Operational Improvements, and Old CIP								
Yearly	Distribution Pipeline Improvements	Annual pipeline, meter, and hydrant		Yearly		0%	$ 350,000	$ -
Yearly	Distribution Pipeline Improvements	Annual pipeline, meter, and hydrant replacement, and hydrant coverage	High	Yearly		0%	$ 351,000	$ -
Dam-A	Annual dam maintenance	14 items recommended in the 2011 CIMP report by CH2M Hill	High	Yearly		0%	$ 4,500	$ -
Dam-01	Secure access to left abutment	Access required to allow for maintenance and emergency activities. Currently access to left abutment is by boat which makes monitoring, repair, or emergency flood fighting measures difficult	High	2015		0%	$ -	$ -
Dam-02	Extend right abutment training wall	Reduce risk of failure by overtopping	High	2015		0%	$ 8,000	$ -
Dam-03	Replace timbers on outlet structure	Project will improve safety	High	2015		0%	$ 1,000	$ -
Dam-04	Stockpile materials to allow for emergency raise of embankment	Ensures access to supplies needed to make temporary repairs or raise embankment during large flood events. Project should include construction of stating area for stockpile of emergency materials.	High	2015		0%	$ 49,000	$ -
Dam-05	Hydraulic modeling/routing study to determine 100-year and probable maximum flood (PMF) pool and tailwater elevations	Evaluate adequacy of embankment crest elevation and potential for overtopping. Use results to establish tregger thresholds for monitoring and emergency operational procedures such as outlet operation (open or closed)	High	2015		0%	$ 54,000	$ -
Dam-06	Improve public notification system	Current system allows for notification to landlines, but does not allow for notification to cellure phone users.	High	Yearly		0%	$ 2,000	$ -
Dam-07	Post "No Trespassing" signs on spillway and embankment	Project improves public safety and limits potential for intentional interference of facilities.	High	2014		0%	$ 1,000	$ -
Dam-08	Perform survey of embankment crest, spillway, and abutment training walls	Determine true height of embankment crest and walls and abutments. Identify low spots for repair. Establish baseline of vertical and horizontal deflections in walls.	High	2015		0%	$ 14,000	$ -

Table 3 – Adopted 2016 Water System Capital Improvement Plan (Continued)

6-20 Year Dam and Deffered Maintenance Work								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2013 $)	SDC Eligible
Replacements, Differed Maintenance, Operational Improvements, and Old CIP								
Dam-09	Fill low points along embankment crest. Raise crest to design elevation of 440 feet.	Reduce potential for concentrated or localized overtopping.	High	2015		0%	$ 8,000	$ -
Dam-10	Fill joints in spillway and training walls.	Original premold joint filler appears to have deteriorated. Filling joints will reduce potential for scour behind spillway walls.	High	2015		0%	$ 8,000	$ -
Dam-11	Repair uppermost joint on spillway wall	Top joint exhibits signs of minor cracking and spalling. Repair damage to prevent additional cracking and more costly future repair.	High	2015		0%	$ 6,000	$ -
Dam-12	Update Emergency Action Plan (EAP)	Add action triggers for pool elevations and rain events.	High	2016		0%	$ 10,000	$ -
Dam-13	Upgrade hydraulic gate controls	Allows automatic verification of gate position	High	2015		0%	$ 25,000	$ -
Dam-14	Install stream gauging upstream of reservoir	Allows monitoring of flows into reservoir	High	2015		0%	$ 50,000	$ -
Dam-15	Seismic assessment and design of seismic stability upgrades for existing spillway and training walls.	Evaluate potential for deformation of collapse of spillway and training walls during seismic event and develop design seismic upgrades if needed.	High	2015		0%	$ 15,000	$ -
Dam-16	Build storage and control room at dam site	Install gate controls, power generator, emergency flood lights for night time inspection.	High	2015		0%	$ 36,000	$ -
Dam-17	Perform inspection of outlet pipe using remotely operated vehicles (ROV)	Assess condition of outlet pipe and schedule repairs if necessary	High	2016		0%	$ 6,000	$ -
Dam-18	Install slope inclinometer casings in right abutment landslide mass and purchase slope inlinometer probe.	Allows monitoring of potential deformation of the landslide mass at right abutment	High	2016		0%	$ 20,000	$ -
Dam 19	Improve Public Notification System			Yearly		0%	$ 2,000	$ -
Dam 20	Structural Improvements to prevent downstream flooding (such as Silver Gardens Restaurant	Reduce downstream flooding		TBD		0%	$ 67,000	$ -

Table 3 – Adopted 2016 Water System Capital Improvement Plan (Continued)

6-20 Year Dam and Deffered Maintenance Work								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2013 $)	SDC Eligible
Replacements, Differed Maintenance, Operational Improvements, and Old CIP								
DMW-1	WTP Improvements	Dive, inspect and clean	High	2015		0%	$ 10,000	$ -
DMW-2	High level pumps	Cla valve rebuilds	High	2015		0%	$ 10,000	$ -
DMW-3	Abiqua Creek intake improvements	Fish screen bypass valve/Trash rack	High	2015		0%	$ 10,000	$ -
DMW-4	Silver Creek Intake Improvemetns	Control Upgrades.	low	2014		0%	$ 10,000	$ -
DMW-5	WTP Improvements	Reroof control building	High	2014		0%	$ 15,000	$ -
DMW-6	WTP Improvements	New awning over generator	High	2014		0%	$ 10,000	$ -
DMW-7	WTP Improvements	Plant #1 Mixer rebuild	High	2015		0%	$ 56,000	$ -
DMW-8	WTP Improvements	Plant #2 Hypochlorite Improvement	High	2015		0%	$ 10,000	$ -
DMW-9	WTP Improvements	Fluoride system upgrade	High	2016		0%	$ 76,000	$ -
DMW-10	High level reservoir	Exterior repainting	High	2016		0%	$ 66,000	$ -
DMW-11	Abiqua Creek dam	Dam Assessment	High	2015		0%	$ 41,000	$ -
DMW-12	WTP Improvements	Plant #1 Handrail Replacement		TBD		0%	$ 10,000	$ -
DMW-13	WTP Improvements	Plant #1 gate replacements		TBD		0%	$ 36,000	$ -
DMW 14	WTP SCADA PLC Project	Abiqua Valve Hand/Auto Control		TBD		0%	$ 51,000	$ -
DMW 15	WTP SCADA PLC Project	SCADA alarm for power loss		TBD		0%	$ -	$ -
DMW-16	WTP SCADA PLC Project	PLC control for Chlor Tech		TBD		0%	$ -	$ -
DMW-17	WTP SCADA PLC Project	PLC control for HL pump station		TBD		0%	$ -	$ -
DMW-18	WTP SCADA PLC Project	SCADA/PLC Data backup for Plant #2		TBD		0%	$ -	$ -
DMW-19	WTP SCADA PLC Project	WTP SCADA Extra page for 1st user		TBD		0%	$ -	$ -
DMW-20	Abiqua Creek Intake Improvements	Replace phone with fiber line		TBD		0%	$ 12,000	$ -
Old	Coolidge St.	Charles to end of 2"		TBD		0%	$ 6,000	$ -
Old	Johnson St.	Barger to end.		TBD		0%	$ 10,000	$ -
OP1	Relocate Existing Service to HL Pressure Zone.			TBD		0%	$ -	$ -
OP6	Set booster controls to turn on/off with new tank levels			TBD		0%	$ -	$ -

Water Customers Current and Future Demographics

Existing Water Demand and Population Growth

Current Silverton water demands are based on historical customer billing records, and actual water meters in service as of January 31, 2019. Projected demands are estimated based on an approximate population growth rate of 1.35 percent within the City's existing urban growth boundary. This annual population growth factor is based on the population forecasts prepared by the Population Research Center at Portland State University (June 30, 2017).

Estimated Demand per Equivalent ¾" Water Meter

The City serves single-family residential customers and a significant number of multifamily housing developments and commercial customers. Single-family residential water services generally have a consistent daily pattern of water use whereas water demands for multifamily residences, commercial and industrial users may vary significantly from service to service depending on the number of multifamily units per service or the type of commercial enterprise. When projecting future water demands based on population change, the water needs of nonresidential and multi-family residential customers are represented by comparing the water use volume at these services to the average single-family residential water service. A method to estimate this relationship is to calculate "equivalent dwelling units (EDUs)". In the case of Silverton, the standard residential unit of demand is the rated capacity (in gallons per minute) of the ¾" water meter. As of January 31, 2019, the City had 3,549 active water meters in service, 3,247 of which were 5/8" x ¾" and ¾" x ¾" meters serving single family residential customers. In other words, roughly 91% of all active water services were assigned to the single-family residential customer class. The process for calculating equivalent ¾" meters is shown below in Table 4.

Table 4 – Estimated ¾" Equivalent Meters in Service as of January 31, 2019

Meter Size	Total Meters In Service	AWWA Rated Flow (GPM)*	Flow Factor Equivalence	3/4" Meter Equivalents
0.625" x 0.75" - Displacement Multi-jet	1,168	30	1.00	1,168
0.75"x 0.75" - Displacement Multi-jet	2,079	30	1.00	2,079
1.00 inch - Displacement Multi-jet	212	50	1.67	353
1.50 inch - Displacement Class I Turbine	45	100	3.33	150
2.00 inch - Displacement or Class I & II Turbine	31	160	5.33	165
3.00 inch - Displacement	13	300	10.00	130
4.00 inch - Displacement or Compound	1	500	16.67	17
6.00 inch - Displacement or Compound	-	1,000	33.33	-
8.00 inch - Compound	-	1,600	53.33	-
Total	3,549			4,062

* - AWWA Manual of Practice M3; Safety Practices for Water Utilities; Table 2-2 Total Quantities

Projected Demands

The planning horizon for the master plan is approximately 20 years, through the year 2037. That is the forecast horizon that is used for the water SDC methodology update. In the 2011 master plan, an estimated number of EDUs per acre for each land use type was established based on (then) current water demands by customer class and total developed land area by land use type. Land use type is analogous to customer class, which is to say the land use or zoning of a particular property reflects the type of water service, such as residential or commercial, provided to that property. The estimated number of potential EDUs per acre was applied to developable land within the existing water service area to estimate water demand.

For this SDC methodology update, the project team did not use the old master plan strategy to forecast future water demand base on land use. With the benefit of actual meters in service, and a population growth forecast that is predicated on existing growth trends for the City a forecast of future equivalent ¾" meters was developed. Based upon these decision rules, the forecast of equivalent meters in use for this water SDC methodology update are shown below in Table 5

Table 5 – Forecast of Equivalent ¾" Meters for the 2019 Water SDC Methodology Update Study

	Forecasted	Meter Equivalents		
Fiscal Year	Growth Rate	Beginning of Year[1]	Additions	End of Year
2017				4,062
2018	1.35%	4,062	55	4,117
2019	1.35%	4,117	55	4,173
2020	1.35%	4,173	56	4,229
2021	1.35%	4,229	57	4,286
2022	1.35%	4,286	58	4,343
2023	1.35%	4,343	59	4,402
2024	1.35%	4,402	59	4,461
2025	1.35%	4,461	60	4,521
2026	1.35%	4,521	61	4,582
2027	1.35%	4,582	62	4,644
2028	1.35%	4,644	63	4,707
2029	1.35%	4,707	63	4,770
2030	1.35%	4,770	64	4,834
2031	1.35%	4,834	65	4,899
2032	1.35%	4,899	66	4,965
2033	1.35%	4,965	67	5,032
2034	1.35%	5,032	68	5,100
2035	1.35%	5,100	69	5,169
2036	1.35%	5,169	70	5,238
2037	1.35%	5,238	71	5,309
			1,247	

1 Source - Silverton utility billing records

Reimbursement Fee Calculations

As discussed earlier in this report, the reimbursement fee represents a buy-in to the cost, or value, of infrastructure capacity within the existing system. In theory, this should be a simple calculation. Simply go to the Utility's balance sheet, find the book value of assets in service, and divide that cost by the number of forecasted new connections to the water system. That is a simple calculation, and it is wrong. In order to determine an equitable reimbursement, we have to account for some key issues of rate equity;

- First, the cost of the system to the City's existing customers may be far less than the total plant-in-service value. This is due to the fact that elements of the existing system may have been contributed, whether from developers, governmental grants, and other sources.
- Second, the value of the existing system to a new customer is less than the value to an existing customer, since the new customer must also pay, through an improvement fee, for expansion of some portions of the system.
- Third, the accounting treatment of asset costs generally has no relationship to the capacity of an asset to serve growth. In the absence of a detailed asset by asset analysis detailed in the balance sheet (or fixed asset schedule), a method has to be used to allocate cost to existing and future users of the asset. Generally, it is industry practice to allocate the cost of existing facilities between used and available capacity proportionally based on the forecasted population growth as converted to equivalent dwelling units (i.e., equivalent ¾" meters) over the planning period.
- Fourth, the Oregon SDC statute has strict limitations on what type of assets can be included in the basis of the reimbursement fee. ORS 223.299 specifically states that a "capital improvement" does not include costs of the operation or routine maintenance of capital improvements. This means the assets on the balance sheet such as certain vehicles and equipment used for heavy repair and maintenance of infrastructure cannot be included in the basis of the reimbursement fee.

For this water SDC methodology update, the following discrete calculation steps were followed to arrive at the recommended water reimbursement fee.

Step 1: Calculate the original cost of water fixed assets in service. From this starting point, eliminate any assets that do not conform to the ORS 223.299 definition of a capital improvement. This results in the **adjusted original cost of water fixed assets**.

Step 2: Subtract from the adjusted original cost of water fixed assets in service the accumulated depreciation of those fixed assets. This arrives at the **modified book value of water fixed assets in service**.

Step 3: Subtract from the modified book value of water assets in service any grant funding or contributed capital. This arrives at the **modified book value of water fixed assets in service net of grants and contributed capital**.

Step 4: Subtract from the modified book value of water fixed assets in service net of grants and contributed capital any principal outstanding on long term debt used to finance those assets. This arrives a **gross water reimbursement fee basis**.

Step 5: Subtract from the gross water reimbursement fee basis the fund balance held in the Water Reimbursement SDC fund (if available). This arrives at the **net water reimbursement fee basis**.

Step 6: Divide the net water reimbursement fee basis by the sum of existing and future EDUs to arrive at the **unit net reimbursement fee**.

The actual data that was used to calculate the total water reimbursement fee is shown below in Table 6.

Table 6 - Calculation of the Water Reimbursement Fee

Utility Plant-in-Service (original cost):[1]		
Land, Easements & Right of Way	$	466,338
Land improvements		246,054
Buildings and improvements		5,354,002
Plant and equipment		2,368,399
Water lines		8,873,436
Construction Work-in-Progress		-
Total Utility Plant-in-Service		17,308,228
Accumulated depreciation[1]		
Land, Easements & Right of Way		-
Land improvements		141,758
Buildings and improvements		2,053,952
Plant and equipment		1,745,751
Water lines		4,674,724
Construction Work-in-Progress		-
Total accumulated depreciation		8,616,185
Book value of water utility plant-in-service @ June 30, 2018		8,692,044
Eliminating entries:		
Principal outstanding on bonds, notes, and loans payable		
Citizens Bank loan to refund USDA RUS loan		976,366
Pension Obligation Bonds amount allocated from government activities		220,093
Water reimbursement SDC fund balance as of June 30, 2018		293,095
Developer Contributions		-
Grants, net of amortization		-
		1,489,554
Net basis in utility plant-in-service available to serve future customers	$	7,202,490
Estimated existing and future 3/4" Meter Equivalents (MEs)		5,309
Calculated reimbursement fee - $ per 3/4"ME	$	1,357

[1] Source: Silverton Accounting Summary Report - Capitalized Assets as of June 30, 2018

Improvement Fee Calculations

The calculation of the water improvement fee is more streamlined than the process used to calculate the water reimbursement fee. This study continues to use the improvements-driven method, and has relied on the 2018 water system capital improvement plan. Under this methodology, only three steps are required to arrive at the improvement fee. These steps are:

Step 1: Accumulate the future cost of planned improvements needed to serve growth. This arrives at **the gross improvement fee basis**.

Step 2: Subtract from the gross improvement fee basis the fund balance held in the Water Improvement SDC Fund. This arrives at **the net water improvement fee basis**.

Step 3: Divide the net water improvement fee basis by the forecasted number of growth equivalent ¾" meters over the planning period. This arrives at **the total water improvement fee**.

The actual data that was used to calculate the total water improvement fee is shown below in Table 7.

Table 7 - Calculation of the Water Improvement Fee

Project Description	Estimated Cost of Improvement in 2018 Dollars	Funding Source: Rates	Funding Source: SDCs
1-5 Year Water Project Summary			
Priority 1 Improvements	$ 10,135,000	$ 5,900,000	$ 4,235,000
6-20 Year Water Project Summary			
Priority 1 Improvements	3,262,000	2,480,800	781,200
Priority 2 Improvements	21,530,000	18,171,070	3,358,930
Priority 3 Improvements	9,285,000	7,731,310	1,553,690
6-20 Year Dam and Deffered Maintenance Work			
Replacements, Differed Maintenance, Operational Improvements, and Old CIP	1,526,500	1,526,500	-
Totals	$45,738,500	$35,809,680	$9,928,820

Total Improvement Fee Eligible Costs for Future System Improvements	$9,928,820
less: Water improvement SDC Fund balance as of June 30, 2018	1,782,889
Adjusted Improvement Fee Eligible Costs for Future System Improvements	$8,145,931
Total Growth in 3/4" Meter Equivalents (20 year forecast)	1,247
Calculated Water Improvement Fee SDC per Meter Equivalent	$6,534

Water SDC Model Summary

The 2019 water SDC methodology update was done in accordance with Silverton Municipal Code Chapter 13.70, and with the benefit of adopted plan updates for water services. We recommend the City update the SDC charge and methodology to reflect the current capital improvement program. Our analysis indicates the City can charge a maximum of $8,285 for the standard ¾" residential water meter. A comparison of the proposed and current water SDCs for the average single-family residential customer is shown below in Table 8.

Table 8 - Proposed and Current Water SDCs for a 3/4" Meter

Line Item Description		City-Wide
Proposed SDC components:		
Reimbursement fee	$	1,357
Improvement fee		6,534
Administration fee at 5%		395
Total proposed water SDC	$	8,285
Current SDC components:		
Reimbursement fee	$	1,475
Improvement fee		4,166
Administration fee at5%		-
Total current water SDC	$	5,641

For water meters larger than ¾", the project team has developed a schedule of SDCs based on the general design criteria for meters that are installed in the Silverton water service area. This criterion is from the standard approach of using American Water Works Association design criteria for displacement and compound water meters.

The resulting schedule of water SDCs for the array of potential meter sizes is shown below in Table 9.

Table 9 - Proposed Schedule of Water SDCs by Potential Water Meter Size

Meter Size	AWWA Rated Flow (GPM)*	Flow Factor Equivalence	Proposed Schedule of Water SDCs			
			Reimbursement	Improvement	Administration	Total
0.75"x 0.75" - Displacement Multi-jet	30	1.00	$ 1,357	$ 6,534	$ 395	$ 8,285
1.00 inch - Displacement Multi-jet	50	1.67	2,261	10,890	658	13,808
1.50 inch - Displacement Class I Turbine	100	3.33	4,522	21,780	1,315	27,617
2.00 inch - Displacement or Class I & II Turbine	160	5.33	7,235	34,847	2,104	44,187
3.00 inch - Displacement	300	10.00	13,566	65,339	3,945	82,850
4.00 inch - Displacement or Compound	500	16.67	22,611	108,898	6,575	138,084
6.00 inch - Displacement or Compound	1000	33.33	45,221	217,795	13,151	276,167
8.00 inch - Compound	1600	53.33	72,354	348,472	21,041	441,868

* - AWWA Manual of Practice M3; Safety Practices for Water Utilities; Table 2-2 Total Quantities Registered per Month by Meters Operating at Varying Percentages of Maximum Capacity

Wastewater SDCs

Wastewater Capital Improvement Plan

As in the case of the water SDCs, the principal sources of data for the wastewater system CIP are the 2018 capital improvement plans for wastewater treatment, pumping stations, and collection systems. City Staff have periodically updated these plans for current development conditions. With the assistance of City Staff, the project team has summarized the 2018 wastewater system CIPs for this SDC methodology update. The 2018 wastewater system CIP is shown in Table 10.

Table 10 - 2016 Wastewater System CIP

Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible	SDC Ineligible
Collection System Improvements									
IMP-1	McClaine Street Sewer	Replace sewer main from W. Main to Westfield. Upsize 1800lf of 8" to 12" and upsize 560lf of 12" to 18" (look at option of CIPP)		2019		0%	$ 421,120.00	$ -	$ 421,120
IMP-2	Master Plan Update	WWTP, Pump Stations, & Collection System		2020		100%	$ 100,000	$ 100,000	$ -
IMP-3	S James Street Capacity	Upsize 570lf of 12" to 18" McClaine to Brooks		2021		80%	$ 257,000	$ 205,600	$ 51,400
IMP-4	Sherman Street Capacity	Upsize 175lf of 12" to 18" Maple St. to N. Water		2022		80%	$ 75,000	$ 60,000	$ 15,000
IMP-5	Adams Ave.	Upsize 880lf of 8" to 12" MH28 to MH824		2023		80%	$ 200,000	$ 160,000	$ 40,000
CA-01	Condition Assessment Program	CCTV Sewer Mains.		Yearly		0%	$ 7,000	$ -	$ 7,000
SR-01	Rehab Projects	Replacement of aging pipelines		Yearly		0%	$ 339,000		$ 339,000
IMP-6	Oregon Garden Lift Station Capacity (current est. 83% capacity)	Install two 400 GPM pumps with one standby pump.		TBD		0%	$ 26,000	$ -	$ 26,000
IMP-7	Oregon Garden Lift Station Capacity	Upsize forcemain 4" to 6"		TBD		80%	$ 253,000	$ 202,400	$ 50,600
CA-01	Condition Assessment Program	Condition of clay, unknown, concrete, ductile iron, PVC pipes.		Yearly		0%	$ 7,000	$ -	$ 7,000
SR-01	Rehab Projects	Replacement of aging pipelines		Yearly		0%	$ 339,000	$ -	$ 339,000
Additional Pump Station Improvements									
PMP-2	Pine Street	New pump station and forcemain		TBD		80%	$ 224,000	$ 179,200	$ 44,800
PMP-3	Setness Lane	New pump station and 6" forcemain and 8" collection pipes.		TBD		80%	$ 1,437,000	$ 1,149,600	$ 287,400

Table 10- 2016 Wastewater System CIP (Continued)

Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible	SDC Ineligible
WWTP Process Control Upgrades, Process Optimization, Solids Processing, and Effluent Management Improvements									
WWD-1	Laboratory/Admin Facility Schematic Design					0%	$ 41,000	$ -	$ 41,000
WWTP-2	Phase 2 Biosolids handling. Lab and admin.								$ -
WWTP-2	Phase 2a - Primary Sludge Pump Station & Bldg.					0%	$ 472,000	$ -	$ 472,000
WWTP-2	Phase 2b - Engr., Admin., & legal (30%)					0%	$ 142,000	$ -	$ 142,000
WWTP-3	Phase 3 Aeration System Upgrade								$ -
WWTP-3	New Laboratory/Locker Rooms					0%	$ 337,000	$ -	$ 337,000
ST-1	Phase 1 Study - Thermodynamic Model Update			TBD		20%	$ 48,000	$ 9,600	$ 38,400
ST-2	Phase 1 Study - Wetland Optimization Study			TBD		20%	$ 35,000	$ 7,000	$ 28,000
WWTP -1	Phase 1 Biosolids Expansion							$ -	$ -
WWTP -1	Phase 1a - Thickened Sludge Blend Tanks.			TBD		65%	$ 517,000	$ 336,050	$ 180,950
WWTP -1	Phase 1a - Dewatering and lime Stabilization Facility			TBD		65%	$ 3,300,000	$ 2,145,000	$ 1,155,000
WWTP -1	Phase 1a - Covered Limed Biosolids Storage			TBD		65%	$ 473,000	$ 307,450	$ 165,550
WWTP -1	Phase 1a - 3-stage Chemical Scrubber Odor Control			TBD		65%	$ 864,000	$ 561,600	$ 302,400
WWTP -1	Phase 1a - Engr., Admin., & Legal (30%)			TBD		65%	$ 1,626,000	$ 1,056,900	$ 569,100
WWTP-2	Phase 2 Biosolids Handling, Lab & Admin.							$ -	$ -
WWTP-2	Phase 2a - Primary Sludge Pump Station			TBD		0%	$ 581,000	$ -	$ 581,000
WWTP-2	Phase 2a - Engr., Admin & Legal (30%)			TBD		0%	$ 142,000	$ -	$ 142,000
WWTP-2	Phase 2b - Aeration System Upgrade	Additional diffusers, headers, and blowers.		TBD		80%	$ 281,000	$ 224,800	$ 56,200

Table 10- 2016 Wastewater System CIP (Continued)

Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible	SDC Ineligible
Differed Maintenance, Operational Improvements, and Old CIP									
DMS-01	WWTP Improvements	Bar Rack Inspect, Tune-up, & Training		2014		0%	$ 3,500	$ -	$ 3,500
DMS-02	WWTP Improvements	UV Inspect, Tune-up, & Training		2014		0%	$ 3,500	$ -	$ 3,500
DMS-03	WWTP Improvements	Security fencing repairs		2014		0%	$ 12,000	$ -	$ 12,000
DMS-04	WWTP Improvements	Bank Stabilization		2014		0%	$ 25,000	$ -	$ 25,000
DMS-05	WWTP Improvements	Parking lot & access Road Overlay		2016		0%	$ 76,000	$ -	$ 76,000
DMS-06	WWTP Improvements	RAS/WAS Building HVAC		2014		0%	$ 31,000	$ -	$ 31,000
DMS-07	WWTP Improvements	Yard lighting improvements		2015		0%	$ 15,000	$ -	$ 15,000
DMS-08	Silver Avenue Lift Station	Wetwell Vault Access		2015		0%	$ 36,000	$ -	$ 36,000
DMS-09	Main Street Lift Station	Pump #1 Replacement		2015		0%	$ 12,000	$ -	$ 12,000
DMS-10	WWTP Improvements	Biosolids Screwpress		2015		100%	$ 510,000	$ 510,000	$ -
DMS-11	WWTP Improvements	Effluent Pumpstation Cover		2014		0%	$ 41,000	$ -	$ 41,000
DMS-12	WWTP Improvements	3rd Anerobic Digester		TBD		33%	$ 2,038,000	$ 672,540	$ 1,365,460
							$ 15,347,120	$ 7,887,740	$ 7,459,380

Wastewater Customers Current and Future Demographics

Existing Wastewater Demand and Population Growth

Current Silverton wastewater demands documented in the 2007 wastewater treatment system master plan are based on Average Annual Dry Weather Flows (AADWF) to the headworks of the wastewater treatment plant. These flows are expressed in million gallons per day (MGD) figures. For the purpose of this wastewater SDC methodology update, the project team had to translate these MGD figures into standard billing units used for charging out SDCs. In this case, those standard billing figures are expressed in EDUs. In the wastewater industry, an EDU is typically defined as the amount of wastewater a single-family residential customer contributes to the wastewater system during an average month in the winter, where winter is defined as November through April. Fortunately, the City's utility billing system tracks the winter average water consumption for the single-family residential customer class. When a new single-family residential customer connects to the wastewater system, that customer is assigned the "system average winter monthly water consumption" for the basis of the sewer usage charge. Once that customer established his/her own winter water usage history, that actual average number overwrites the system average. For the winter period November, 2015 through April, 2016, the average single-family residential customer contributes 5.15 hundred cubic feet (CCF) of water to the wastewater system in the average winter month. This hundred cubic feet figure translates to 127 gallons per day.

Forecasted EDUs

With this historical consumption data in hand, the project team was able to calculate the number of EDUs relative to the AADWF data from the wastewater treatment plant monitoring data that gets reported to the Oregon Department of Environmental Quality on a monthly basis. The EDU calculation methodology is shown in Table 11.

Table 11 - Forecast of Current and Future Wastewater EDUs

	2017	2037	Growth	CAGR[1]
PSU population forecasts	10,214	13,349	3,135	1.35%
Average Dry Weather Flow (ADWF) MGD[2] 2015-2018 average	0.9940	1.2991	0.3051	1.35%
Observed Silverton EDU				
Ccf per month - Single Family Residential[3]	5.20	5.20		
Gallons per month - SFR	3,890	3,890		
Gallons per day - SFR	128	128		
Estimated EDUs based on ADWF and observed Silverton SFR winter ave. metered water consumption	7,772	10,157	2,385	1.35%

1 CAGR - Compounded Annual Growth Rate

2 Source: City of Silverton Discharge Monitoring Reports

3 Source: City of Silverton utility billing system records

Reimbursement Fee Calculations

The wastewater reimbursement fee methodology mirrors that used for the water reimbursement fee. The methodological steps in its construction are restated here.

Step 1: Calculate the original cost of wastewater fixed assets in service. From this starting point, eliminate any assets that do not conform to the ORS 223.299 definition of a capital improvement. This results in the **adjusted original cost of wastewater fixed assets**.

Step 2: Subtract from the adjusted original cost of wastewater fixed assets in service the accumulated depreciation of those fixed assets. This arrives at the **modified book value of wastewater fixed assets in service**.

Step 3: Subtract from the modified book value of wastewater assets in service any grant funding or contributed capital. This arrives at the **modified book value of wastewater fixed assets in service net of grants and contributed capital**.

Step 4: Subtract from the modified book value of wastewater fixed assets in service net of grants and contributed capital any principal outstanding on long term debt used to finance those assets. This arrives a **gross wastewater reimbursement fee basis**.

Step 5: Subtract from the gross wastewater reimbursement fee basis the fund balance held in the Wastewater Reimbursement SDC fund (if available). This arrives at the **net wastewater reimbursement fee basis**.

Step 6: Divide the net wastewater reimbursement fee basis by the sum of existing and future EDUs to arrive at the **unit net reimbursement fee**.

The actual data that was used to calculate the total wastewater reimbursement fee is shown below in Table 12.

Table 12 - Calculation of the Wastewater Reimbursement Fee

	Original Cost	Percent Available to Serve Growth[3]	Net Basis for Reimbursement Fee Calculation
Utility plant-in-service original cost:			
Land & Improvements	$ 1,834,929	24.7%	$ 453,799
Buildings & Improvements	1,404,794	24.7%	347,421
Plant & Equipment	22,615,404	24.7%	5,593,046
Sewer lines	8,254,320	17.8%	1,465,967
Construction in progress	21,972	24.7%	5,434
Subtotal	34,131,419	23.0%	7,865,667
less:			
Grants and contributed capital[2]	6,198,188	17.8%	1,100,798
Sewer reimbursement fee SDC fund balance	960,066	100.0%	960,066
Principal outstanding on long term debt:			
Sewer Refunding bonds series 2010	5,930,000		
Local Oregon Capital Assets Program loan 2011	3,335,000		
Pension Obligation Bonds amount allocated from governmental activities	220,093		
Subtotal principal outstanding on long term debt	9,485,093	23.0%	2,185,862
Net utility plant-in-service basis available to serve future customers			$ 3,618,941
Estimated ERU additions (fiscal 2018 through fiscal 2037)			2,385
Calculated reimbursement fee - $/Equivalent Residential Unit (ERU)			$ 1,517

[1] Source: City of Silverton audit work papers and Certified Annual Financial Report for the fiscal year ended June 30, 2018; Boldt, Carlisle & Smith LLC Certified Public Accountants

[2] Source: City of Silverton System Development Charge Study for the Transportation, Water & Sewer Services; August, 2005; FCS Group, Inc., in association with DKS Associates, and LDC Design Group

[3] Source: City of Silverton, Department of Public Works analysis

Improvement Fee Calculations

The calculation of the wastewater improvement fee also follows the logic that was used to calculate the water improvement fee. As in the case of water, this study continues to use the improvements-driven method, and has relied on the capital improvement plans, and plan updates for the wastewater treatment, pump stations, and collection systems. Under this methodology, only three steps are required to arrive at the improvement fee. These steps are:

Step 1: Accumulate the future cost of planned improvements needed to serve growth. This arrives at **the gross improvement fee basis**.

Step 2: Subtract from the gross improvement fee basis the fund balance held in the Wastewater Improvement SDC Fund. This arrives at **the net wastewater improvement fee basis**.

Step 3: Divide the net wastewater improvement fee basis by the forecasted number of growth EDUs over the planning period. This arrives at **the total wastewater improvement fee**.

The actual data that was used to calculate the total wastewater improvement fee is shown below in Table 13.

Table 13 - Calculation of the Wastewater Improvement Fee

	Total Cost	SDC Eligible	SDC Ineligible
Collection System Improvements	$ 2,024,120	$ 728,000	$ 1,296,120
Additional Pump Station Improvements	1,661,000	1,328,800	332,200
WWTP Process Control Upgrades, Process Optimization, Solids Processing, and Effluent Management Improvements	8,859,000	4,648,400	4,210,600
Differed Maintenance, Operational Improvements, and Old CIP	2,803,000	1,182,540	1,620,460
Total	$ 15,347,120	$ 7,887,740	$ 7,459,380

Total Improvement Fee Eligible Costs for Future System Improvements	$ 7,887,740
less: Sewer improvement fee SDC Fund balance as of June 30, 2018	936,671
Adjusted Improvement Fee Eligible Costs for Future System Improvements	6,951,069
Total Growth in sewer EDUs (20 year forecast)	2,385
Calculated Water Improvement Fee SDC per Meter Equivalent	$ 2,914

Wastewater SDC Model Summary - Residential

The 2019 wastewater SDC methodology update was done in accordance with Silverton Municipal Code Chapter 13.70, and with the benefit of adopted capital improvement plans and plan updates for wastewater services. We recommend the City update the SDC charge and methodology to reflect the current capital improvement program. Our analysis indicates the City can charge a maximum of $4,653 for the standard ¾" residential water meter. A comparison of the proposed and current wastewater SDCs for the average single-family residential customer is shown below in Table 14.

Table 14 - Proposed and Current Wastewater SDCs for a 3/4" Meter

Sewer SDC Components	Proposed	Current	Difference
Reimbursement fee	$ 1,517	$ 2,031	$ (514)
Improvement fee	2,914	3,084	(170)
Administration fee at 5%	222	-	222
Total water SDC	$ 4,653	$ 5,115	$ (462)

For water meters larger than ¾", the schedule of wastewater SDC uses the same flow factors that were developed for the water SDCs (i.e., AWWA standards for displacement and compound meters). The complete proposed schedule of wastewater SDCs by potential meter size are shown in Table 15.

Table 15 - Proposed Schedule of Residential Wastewater SDCs by Potential Water Meter Size

Meter Size	AWWA Rated Flow (GPM)*	Flow Factor Equivalence	Proposed Schedule of Wastewater SDCs			
			Reimbursement	Improvement	Administration	Total
⅝ & ¾ inch	15	1.00	1,517	2,914	222	4,653
1 inch	25	1.67	2,529	4,857	369	7,756
1½ inch	50	3.33	5,058	9,715	739	15,512
2 inch	80	5.33	8,093	15,544	1,182	24,818
3 inch	160	10.67	16,185	31,088	2,364	49,637
4 inch	250	16.67	25,290	48,575	3,693	77,558
6 inch	500	33.33	50,579	97,150	7,386	155,115
8 inch	800	53.33	80,927	155,440	11,818	248,185
10 inch	1,250	83.33	126,448	242,875	18,466	387,789
12 inch	2,160	144.00	218,502	419,687	31,909	670,099

* Recommended maximum rate for continuous operations; per American Water Works Association standards effective January 1, 2003 for cold water meters- displacement type, bronze main case. ANSI approval October 11, 2002. American Water Works Association ANSI/AWWA C700-02 (Revision of ANSI/AWWA C700-95).

Wastewater SDC Model Summary – Nonresidential

The residential wastewater SDCs are based on the assumption that wastewater strength for residential customers is uniformly domestic. This assumption is not appropriate for non-residential customers. Instead, we organize commercial customers into three strength-based categories, and we charge industrial customers based on expected flow and strength. The characteristics of the residential and commercial customer classes are shown below:

Customer Class Pollutant Loading Assumptions

	Residential	Commercial I	Commercial II	Commercial III
BOD (mg/l)	200	200	600	1,000
TSS (mg/l)	200	200	600	1,000
BOD load factor	1	1	3	5
TSS load factor	1	1	3	5

The load factor shown above is a multiple of domestic (residential) strength. Making strength-based distinctions among customers require the allocation of wastewater utility costs to both flow and strength. Moreover, the industry standard is to allocate strength-related costs between biochemical oxygen demand (BOD) and total suspended solids (TSS). Table 16 shows how this cost allocation results in (1) SDCs per EDU for the three categories of commercial customer and (2) unit costs for industrial (Commercial IV) customers. Please note, the customer classifications are defined in SMC §13.04.255.

Table 16 - Proposed Schedule of Nonresidential Wastewater SDCs for Nonresidential Customers

Line Item Description	Flow (Q)	BOD	TSS	Subtotal	Administration	Total
Section 1 - Proposed SDCs for Residential and Commercial Classes I, II, and III						
Reimbursement fee:						
Net utility plant-in-service basis available to serve future customers	$ 1,779,680	$ 1,348,517	$ 490,743	$ 3,618,941		
Weighted average allocations	49.18%	37.26%	13.56%	100.00%		
Projected growth EDUs	2,385	2,385	2,385	2,385		
Reimbursement fee SDC per EDU	$ 746	$ 565	$ 206	$ 1,517		
Improvement fee:						
Adjusted improvement fee SDC basis	$ 3,867,960	$ 1,541,554	$ 1,541,554	$ 6,951,069		
Weighted average allocations	55.65%	22.18%	22.18%	100.00%		
Projected growth EDUs	2,385	2,385	2,385	2,385		
Improvement fee SDC per EDU	$ 1,622	$ 646	$ 646	$ 2,914		
Derivation of SDCs by customer class:						
Residential	$ 2,368	$ 1,212	$ 852	$ 4,432	$ 222	$ 4,653
Commercial I	$ 2,368	$ 1,212	$ 852	$ 4,432	$ 222	$ 4,653
Commercial II	$ 2,368	$ 3,635	$ 2,556	$ 8,560	$ 428	$ 8,988
Commercial III	$ 2,368	$ 6,059	$ 4,261	$ 12,687	$ 634	$ 13,322
Section 2 - Proposed SDCs for Commercial Class IV and Industrial:						
Reimbursement fee	$ 3.02	1,370.64	498.79			
Improvement fee	6.56	1,566.85	1,566.85			
Total SDC	$ 9.58	$ 2,937.49	$ 2,065.64			
per	Gal per day	Lb. per day	Lb. per day			

Stormwater SDCs

Stormwater Capital Improvement Plan

As in the case of the water and wastewater SDCs, the principal sources of data for the stormwater system CIP are the 2018 capital improvement plans for stormwater collection, detention, treatment, and disposal systems. City Staff have periodically updated these plans for current development conditions. With the assistance of City Staff, the project team has summarized the 2018 stormwater system CIPs for this SDC methodology update. The 2018 stormwater system CIP is shown in Table 17.

Table 17 - 2018 Stormwater System CIP

1-5 Year Storm Sewer Project Summary								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible
Priority 1 Improvements								
1A	McClaine Street Improvements	Install 1600 LF of 12" and 198 LF of 15" pipe		2019		5%	$ 380,000	$ 19,000
1B	N. 2nd Street & Mills Addition Improvements	Install 5344 LF of 15", 275 LF of 18", 308 LF of 21", and 278 LF of 24".		2023		20%	$ 1,807,000	$ 361,400
1C	Master Plan Update	Update Storm Master Plan		2020		100%	$ 50,000	$ 50,000
						Subtotal	**$ 2,237,000**	**$ 430,400**
Yearly Maintenance, Yearly Replacement Improvements, and Old CIP								
OP1	Yearly Maintenance	Line and Inlet Cleaning		Yearly		0%	$ 152,000	$ -
R1	System Replacement Program			Yearly		0%	$ 436,000	$ -
						Subtotal	**$ 588,000**	**$ -**

Table 17- 2018 Stormwater System CIP (Continued)

6-20 Year Storm Sewer Project Summary								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible
Priority 1 Improvements								
1B	N. 2nd Street & Mills Addition Improvements	Install 5344 LF of 15", 275 LF of 18", 308 LF of 21", & 278 LF of 24" Pipe.		2023		20%	$ 441,000	$ 88,200
1C	W. Main, Welch, and Cherry Street Stormwater	Install 1273 LF of 12", 561 LF of 15", 271 LF of 18".		2024		10%	$ 760,000	$ 76,000
1D	Hight Street To E. Main Street Stormwater	Install 781 LF of 12", 251 LF of 15", 386 LF of 24", & 1394 LF of 30" Pipe.		2025		5%	$ 1,210,000	$ 60,500
1E	Jersey Street Stormwater	Install 1003 LF of 30" Pipe		2026		5%	$ 541,000	$ 27,050
						Subtotal	**$ 2,952,000**	**$ 251,750**
Priority 2 Improvements								
2B	N. James Street and Pine Street Improvements	Install 916 LF of 12" pipe		TBD		0%	$ 284,000	$ -
2C	Sheridan Street and Pine Street Improvements	Install 60 LF of 12", 65 LF of 15" & 70 LF of 18" pipe		TBD		10%	$ 344,000	$ 34,400
2D	Rock Street to S. 3rd Street Connection	Install 1,570 LF of 12" pipe		TBD		10%	$ 260,000	$ 26,000
2F	Koons Street Improvements	Install 211 LF of 12", and 734 LF of 18" pipe.		TBD		0%	$ 316,000	$ -
2G	James Street Improvements	Install 544 LF of 18", and 180 LF of 24" pipe.		TBD		5%	$ 221,000	$ 11,050
						Subtotal	**$ 1,425,000**	**$ 71,450**
Priority 3 Improvements								
3A	Oak Street Improvements	Install 606 LF of 24" pipe		TBD		35%	$ 235,000	$ 82,250
3B	Hwy 214 Detention Facility	Sub-regional detention and water quality facility with bore under the RR tracks.		TBD		10%	$ 1,267,000	$ 126,700
3C	Monson Rd. Improvements	Install 444 LF of 30" pipe		TBD		40%	$ 192,000	$ 76,800
3D	Grant Street Improvements	Install 545 LF of 15" pipe		TBD		10%	$ 153,000	$ 15,300
3E	W McClaine Street Improvements	Install 309 LF of 18" pipe		TBD		0%	$ 112,000	$ -
3F	Monitor Rd. Improvements	Install 291 LF of 21" pipe		TBD		55%	$ 73,000	$ 40,150
	Steelhammer Road	Jaysie Drive to Evans Valey Road		TBD			$ 560,000	
						Subtotal	**$ 2,592,000**	**$ 341,200**
Yearly Maintenance, Yearly Replacement Improvements, and Old CIP								
OP1	Yeary Maintenance	Line and inlet cleaning		Yearly		0%	$ 152,000	$ -
R1	System Maintenance Program			Yearly		0%	$ 436,000	$ -
						Subtotal	**$ 588,000**	**$ -**

Stormwater Customers Current and Future Demographics

Existing Stormwater Demand and Population Growth

Silverton's stormwater utility service charge and SDC are based on estimated impervious surface area. The average amount of impervious area on a single family residential developed lot within the City is set at 3,121 square feet (per the 2012 stormwater cost of service study). This equates to one "equivalent service unit" or ESU. Both rates and SDCs are calculated as a function of ESUs meaning that each property's fee is calculated as follows:

$$Estimated\ Impervious\ Surface\ \div 3{,}121\ square\ feet\ = Number\ of\ ESUs$$

The number of ESUs is then multiplied by the unit rate to determine the service charge or SDC amount. The number of ESUs currently connected to the City's system is 5,307 as established through the City's Stormwater Utility billing records. In order to determine the future capacity requirements of the City's stormwater system, each basin plan and facility plan forecasts the amount of additional impervious surface through the planning period. This forecast is based on future land use conditions and the corresponding runoff coefficients assigned to these various land uses. The future growth in ESUs within each of the City's existing basins and planning areas is based on these specific land use and impervious surface projections.

Forecasted EDUs

With current stormwater demand estimated at 5,307 ESUs, the project team was able to calculate the number of ESUs at buildout using the Portland State University Population Research Center's population forecast out to 2037. These inventories are predicted on the currently approved urban growth boundary (UGB) of the City. As discussed above, the forecast is based on the future land use conditions and the corresponding runoff coefficients assigned to the Comprehensive Plan land use designations. The buildout ESU forecast methodology is shown in Table 18.

Table 18 - Forecast of Current and Future Stormwater ESUs

	2017	2019	2037	Growth	CAGR[1]
PSU population forecasts[2]	10,214		13,349	3,135	1.35%
Equivalent Service Units (ESUs):[3]					
Estimated total impervious surface from developed lands (square feet)	14,746,007		19,272,482	4,526,475	1.35%
Measured square feet of Impervious Area per ESU	3,121		3,121	-	-
Estimated ESUs	4,725		6,175	1,450	1.35%
Billed ESUs February 1, 2019		5,307	6,936	1,629	1.35%

1 CAGR - Compounded Annual Growth Rate

2 Source: Population Forecasts prepared by Population Research Center, Portland State University, June 30, 2017

3 Source: For 2017 estimate, City of Silverton Planning Department, GIS

Reimbursement Fee Calculations

As with the water and wastewater utilities described above, the cost basis of a reimbursement fee is often a categorized (or functionalized) inventory of assets. In other cases, such as the City's stormwater utility, no such inventory is available. However, we do know that $1,278,929 in stormwater improvement fees have been expended on stormwater facilities over the past fifteen years. By definition, these expenditures create new capacity that will serve future users. Because only a small amount of growth has occurred since these monies were expended, we can conclude that excess capacity exists and that a reimbursement fee may be charged for stormwater.

Calculation of the reimbursement fee begins with the historical cost of assets or recently completed projects that have unused capacity to serve future users. For each asset or project, the historical cost is multiplied by that portion of the asset or project that is available to serve future users. To avoid double-charging growth, the reimbursement fee cost basis must be reduced by any grants or contributions used to fund the assets or projects included in the cost basis. Furthermore, unless a reimbursement fee will be specifically used to pay debt service, the reimbursement fee cost basis should be reduced by any outstanding debt related to the assets or projects included in the cost basis. These reductions result in the gross reimbursable cost.

Determining the net reimbursable cost requires two adjustments. First, any fund balance of reimbursement fees that have been previously collected are deducted from the cost basis. Second, any compliance costs that are to be attributed to the reimbursement fee should be added to the cost basis. Once the net reimbursable cost is computed, we divide by the growth in ERUs to determine the reimbursement fee per ERU.

The actual data that was used to calculate the total stormwater reimbursement fee is shown below in Table 19.

Table 19 - Calculation of the Stormwater Reimbursement Fee

	Original Cost	Percent Available	Reimbursable
Stormwater capital improvement expenditures:[1]			
Fiscal 2002-03 through fiscal 2011-12	$ 608,803	49%	$ 301,089
Fiscal 2012-13	38,320	59%	22,628
Fiscal 2013-14	-	66%	-
Fiscal 2014-15	63,702	73%	46,439
Fiscal 2015-16	296,147	81%	239,879
Fiscal 2016-17	271,957	90%	244,761
Fiscal 2017-18	-	100%	-
Gross reimbursement cost basis	$ 1,278,929		$ 854,796
Eliminating entries:			
Stormwater reimbursement SDC fund balance			110,690
Principal outstanding on bonds, notes, and loans payable			-
Grants, net of amortization			-
Developer contributions			-
Subtotal eliminating entries			110,690
Net reimbursement cost basis			$ 744,106
Estimated future stormwater ESUs			1,629
Calculated reimbursement fee - $ per ESU			$ 457
Calculate reimbursement fee - $/square foot of impervious surface			$ 0.1464

[1] Source: Silverton accounting records for FY 2002-03 through fiscal 2011-12; all other years from City audits

Improvement Fee Calculations

The calculation of the stormwater improvement fee also follows the logic that was used to calculate the water improvement fee. As in the case of water, this study continues to use the improvements-driven method, and has relied on the capital improvement plans, and plan updates for the stormwater systems. Under this methodology, only three steps are required to arrive at the improvement fee. These steps are:

Step 1: Accumulate the future cost of planned improvements needed to serve growth. This arrives at **the gross improvement fee basis**.

Step 2: Subtract from the gross improvement fee basis the fund balance held in the Stormwater Improvement SDC Fund. This arrives at **the net stormwater improvement fee basis**.

Step 3: Divide the net stormwater improvement fee basis by the forecasted number of growth EDUs over the planning period. This arrives at **the total stormwater improvement fee**.

The actual data that was used to calculate the total stormwater improvement fee is shown below in Table 20.

Table 20 - Calculation of the Stormwater Improvement Fee

Project Description	Estimated Cost of Improvement in 2018 Dollars	Cost Attributed to Existing Demands[1]	Costs Attributed to Future Demands
Priority 1 Improvements			
McClaine Street Improvements	$ 380,000	$ 361,000	$ 19,000
N. 2nd Street & Mills Addition Improvements	1,807,000	1,445,600	361,400
Master Plan Update	50,000	-	50,000
N. 2nd Street & Mills Addition Improvements	441,000	352,800	88,200
W. Main, Welch, and Cherry Street Stormwater	760,000	684,000	76,000
Hight Street To E. Main Street Stormwater	1,210,000	1,149,500	60,500
Jersery Street Stormwater	541,000	513,950	27,050
Priority 2 Improvements			
N. James Street and Pine Street Improvements	284,000	284,000	-
Sheridan Street and Pine Street Improvements	344,000	309,600	34,400
Rock Street to S. 3rd Street Connection	260,000	234,000	26,000
Koons Street Improvements	316,000	316,000	-
James Street Improvements	221,000	209,950	11,050
Priority 3 Improvements			
Oak Street Improvements	235,000	152,750	82,250
Hwy 214 Detention Facility	1,267,000	1,140,300	126,700
Monson Rd. Improvements	192,000	115,200	76,800
Grant Street Improvements	153,000	137,700	15,300
W McClaine Street Improvements	112,000	112,000	-
Monitor Rd. Improvements	73,000	32,850	40,150
Steelhammer Road	560,000	560,000	-
Yearly Maintenance, Yearly Replacement Improvements, and Old CIP			
Yearly Maintenance	152,000	152,000	-
System Replacement Program	436,000	436,000	-
Yeary Maintenance	152,000	152,000	-
System Maintenance Program	436,000	436,000	-
Totals	$10,382,000	$9,287,200	$1,094,800

Total Improvement Fee Eligible Costs for Future System Improvements	$1,094,800
less: Stormwater improvement SDC fund balance	478,291
Adjusted Improvement Fee Eligible Costs for Future System Improvements	$616,509
Total growth ESUs	1,629
Calculated stormwater Improvement Fee SDC per EDU	$379
Calculated stormwater Improvement Fee SDC per square foot of Impervious surface	$0.1213

[1] Allocations from City staff

Stormwater SDC Model Summary

The 2018 stormwater SDC methodology update was done in accordance with Silverton Municipal Code Chapter 13.70, and with the benefit of adopted capital improvement plans and plan updates for stormwater services. We recommend the City update the SDC charge and methodology to reflect the current capital improvement program. Our analysis indicates the City can charge a maximum of $877 per ESU. A comparison of the proposed and current stormwater SDCs for the average single-family residential customer is shown below in Table 21.

Table 21 - Proposed and Current Stormwater SDCs per ESU and per Square Foot of Impervious Surface

Line Item Description	Per EDU	Per Sq. Foot of Impervious Surface
Proposed SDC components:		
Reimbursement fee	$ 457	$ 0.1464
Improvement fee	379	0.1213
Administration fee at 5%	42	0.0054
Total proposed stormwater SDC	$ 877	$ 0.2731
Current SDC components:		
Reimbursement fee	$ 331	$ 0.1061
Improvement fee	567	0.1817
Administration fee at 5%	-	-
Total current stormwater SDC	$ 898	$ 0.2878

Transportation SDCs

Transportation Capital Improvement Plan

The principal sources of data for the transportation system CIP are the 2018 capital improvement plans for transportation. The primary categories of transportation system improvements are:

- Intersection improvement projects
- Street reconstruction projects
- Roadway widening projects
- Bicycle lanes
- Pedestrian sidewalks, pathways, crossings, audits

City Staff have periodically updated these plans for current development conditions. With the assistance of City Staff, the project team has summarized the 2018 transportation system CIPs for this SDC methodology update. The 2018 transportation system CIP is shown in Table 22.

Table 22 - 2016 Transportation System CIP

1-5 Year Transportation Project Summary								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2018 $)	SDC Eligible
Intersection Improvements (I), Studies (S), Connector Roadway (C)								
S-01	SDC Methodology Update	Transportation SDC Methodology Update. Need to complete the new Transportation Master Plan first.	High	2015	2018	100%	$ 30,000	$ 30,000.00
Roadway Reconstruction (RR)								
RR-01	McClaine Street	Westfield Street to W Main Street. 34' curb to curb. Includes PS-05 & BL-17			2019		$1,750,000.00	
RR-02	Steelhammer Rd. (not including year 6-20 costs $1,000,000)	Jaysie Dr. to Evans Valley Rd. Funded by City and LID	High	2022	2020	0%	$ 223,000	$ -
RR-03	N 2nd Street	Railroad to N. City Limits		TBD		0%	$ 985,000	$ -
Bicycle Lanes (BL)								
BL-04	S. Water Street	Lane St. to Pioneer Dr. (both sides) Funded by ODOT grant	High	2015	2021	30%	$ 562,000	$ 168,600
Pedestrian Sidewalk (PS), Pedestrian Pathway (PP), Pedestrian Crossings (PC), and Audits (A)								
PS-03	S. Water Street	Smith St. south to city limits (both). Funded by ODOT grant.	High	2015	2021	30%	$ 1,063,000	$ 318,900
PS-08	James St.	C St. to Brook St. (west) (Revised - Added $45k for RR X-ing)	High	2015	TBD	30%	$ 63,000	$ 18,900

Table 22- 2018 Transportation System CIP (Continued)

6-20 Year Transportation Project Summary								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2013 $)	SDC Eligible
Intersection Improvements (I), Studies (S), Connector Roadway (C)								
I-01	McClaine Street/Main Stree	Signal and WBRTL		TBD		100%	$ 600,000	$ 600,000
I-02	Main Street/Water Street	Signal		TBD		100%	$ 281,000	$ 281,000
I-03	Oak Street/1st Street	Signal		TBD		100%	$ 281,000	$ 281,000
I-04	Main Street/1st Street	Signal		TBD		100%	$ 281,000	$ 281,000
I-05	C Street/McClaine Street	SBRTL		TBD		100%	$ 472,000	$ 472,000
I-06	Oak Street/Water Street	Signal		TBD		100%	$ 281,000	$ 281,000
I-Pine	Pine Street/James Street	Signal w/NB & SB RTL		TBD		100%	$ 966,000	$ 966,000
C-01	Eastside North-south Collector #4 (Phase 1)	Pioneer Drive to Evans Valley Road. Dev. Driven		TBD		12%	$ 7,550,000	$ 906,000
C-02	Eastside North-south Collector #4 (Phase 2)	Evans Valley Road to Oak Street. Dev. Driven		TBD		12%	$ 5,950,000	$ 714,000
C-Brown	Brown Street Realignment	Pine and Brown St. from James to N. Water		TBD		12%	$ 2,200,000	$ 264,000
Roadway Reconstruction								
RR-02	Steelhammer Road	Oak Street to Evans Valley Road	Med.	2016	2020	0%	$ 1,000,000	$ -
	Lincoln Street	Widen Lincoln St. from Mill St. to N. 2nd St.		TBD				
RR-03	N. 2nd Street	D Street to Roths		TBD		0%	$ 190,000	$ -
RR-04	E. Main Street	5th Street to Steelhammer Majority is County Road		TBD		0%	$ 1,695,000	$ -
RR-10	Eureka Avenue	W. Main Street to Edison Road County Road		TBD		0%	$ 1,745,000	$ -
RR-14	Elm Street	Whittier Street to Lincoln Street		TBD		0%	$ 315,000	$ -
RR-15	Mead Street	N. Water Street to Pine Street		TBD		0%	$ 90,000	$ -
RR-16	Ord Street	N. Water Street to Pine Street		TBD		0%	$ 90,000	$ -
RR-17	Park Street	2nd Street to 3rd Street		TBD		0%	$ 80,000	$ -
RR-19	Johnson Street	West end to Madison Street		TBD		0%	$ 110,000	$ -
RR-20	Orchard Street	Well Street to Florida		TBD		0%	$ 190,000	$ -
RR-21	Rock Street	E. Main Street to Kent Street		TBD		0%	$ 105,000	$ -
RR-22	Brooks Street	Alder Street to Wilson Street		TBD		0%	$ 135,000	$ -
RR-23	Short Street	Fossholm Road to Wilson Street		TBD		0%	$ 105,000	$ -
RR-24	Wilson Street	Short Street to Brook Street		TBD		0%	$ 175,000	$ -
RR-25	N. 3rd Street	Oak Street to B Street		TBD		0%	$ 270,000	$ -
RR-26	Hill Street	Oak Street to Mill Street		TBD		0%	$ 180,000	$ -
RR-27	Maple Street & Sherman Str	N. Water to South end		TBD		0%	$ 165,000	$ -
RR-28	Wall Street & Bartlett Street	Norway Street to South end		TBD		0%	$ 175,000	$ -

Table 22- 2018 Transportation System CIP (Continued)

6-20 Year Transportation Project Summary								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2013 $)	SDC Eligible
		Bicycle Lanes (BL)						
BL-01	1st Street	Hobart Road to B Street (both) ODOT Road		TBD		30%	$ 76,000	$ 22,800
BL-02	Oak Street	Steelhammer Road to East City Limits (both) ODOT Road	High	TBD		30%	$ 287,000	$ 86,100
BL-03	N. Water Street (revised)	James Street to C Street (both)		TBD		30%	$ 131,000	$ 39,300
BL-05	Pine Street	West City Limits to James Street (both) 60% of Pine St. is a County Road		TBD		30%	$ 388,000	$ 116,400
BL-06	Silverton Road	West City Limits to Existing Section (both)		TBD		30%	$ 295,000	$ 88,500
BL-07	2nd Street	Bow Tie Lane to Oak Street (both) Need to reconstruct this road. Add big bucks.		TBD		30%	$ 5,624	$ 1,687
BL-08	Oak Street	Norway Street to Steelhammer Road (both) ODOT Road		TBD		30%	$ 16,000	$ 4,800
BL-09	Eureka Avenue	Main Street to South City Limits (both) County Road	low	TBD		30%	$ 725,000	$ 217,500
BL-10	Main Street	Westfield Street to Water Street (both)		TBD		30%	$ 525,000	$ 157,500
BL-11	Oak Street	3rd Street to Church Street (both) ODOT Road		TBD		30%	$ 215,000	$ 64,500
BL-12	McClaine Street	Existing Section to Main Street (both)		TBD		30%	$ 290,000	$ 87,000
BL-13	Monitor Road	Oak Street to Hobart Road (both) County Road. Development Driven		TBD		30%	$ 540,000	$ 162,000
		Steelhammer Road to East City Limits (both) Starts at city limits and goes to UGB.						
BL-16	Evans Valley Road	Development Driven. County Road		TBD		30%	$ 305,000	$ 91,500
BL-17	Steelhammer Road	Oak Street to Evans Valley Road (both)	Med.	2016	2020	30%	$ 330,000	$ 99,000
BL-18	N. 2nd Street	Hobart Road to Bow Tie Lane (both) Section of N. 2nd Street is in the UGB and also a County Road	Low	TBD		30%	$ 325,000	$ 97,500
BL-20a	James Street	Hobart Road to N. Water Street (both) More than 50% of James Street is in the County.		TBD		30%	$ 345,000	$ 103,500
BL-20b	Hobart Road	James Street to Monitor Road (both) Section of Hobart Road is in the UGB and also a County Road. Development driven.		TBD		30%	$ 290,000	$ 87,000
BL-21	Bicycle Route Signage	Downtown Locations		TBD		30%	$ 28,000	$ 8,400
BL-22	Bicycle Parking	Downtown Locations		TBD		100%	$ 22,000	$ 22,000

Table 22- 2018 Transportation System CIP (Continued)

6-20 Year Transportation Project Summary								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2013 $)	SDC Eligible
Pedestrian Sidewalk (PS), Pedestrian Pathway (PP), Pedestrian Crossings (PC), Audits (A)								
PS-01	Oak Street	Steelhammer Road to east City Limits (both)	High	TBD		30%	$ 400,000	$ 120,000
PS-02	Pine Street (gap infill)	Grant Street to west City Limits (south)	High	TBD		30%	$ 165,000	$ 49,500
PS-04	C Street	McClaine Street to James Street (both)	High	TBD		30%	$ 175,000	$ 52,500
PS-05	Steelhammer Road	Oak Street to Evans Valley Road (both)	High	2016	2020	30%	$ 305,000	$ 91,500
PS-06	C Street	1st Street to 2nd Street (south) (revised)	High	TBD		30%	$ 20,000	$ 6,000
PS-07	James Street	C Street to N. Water Street (east)	High	TBD		30%	$ 60,000	$ 18,000
PS-09	Westfield Street	Main Street to South Street (east) (revised)	High	TBD		30%	$ 35,000	$ 10,500
PS=10	E. Main Street	3rd Street to Steelhammer Road (both)	High	TBD		30%	$ 640,000	$ 192,000
PS-11	Oak Street	Mill Street to Steelhammer Road (south)	Med.	TBD		30%	$ 320,000	$ 96,000
PS-12	N. Water Street	James Street to C Street (south)	Med.	TBD		30%	$ 60,000	$ 18,000
PS-14	C Street	James Street to N. Water Street (both)	Med.	TBD		30%	$ 220,000	$ 66,000
PS-15	James Street	Florida Street to City Limits (both) (revised)	Med.	TBD		30%	$ 280,000	$ 84,000
PS-16	Westfield Street	South Street to McClaine Street (east) (revise	Med.	TBD		30%	$ 190,000	$ 57,000
PS-17	B Street	1st Street to Mill Street (south) (revised)	Med.	TBD		30%	$ 60,000	$ 18,000
PS-18	1st Street	Hobart Road to RR Tracks (both) More than 50% of project is in the UGB, and 100% in ODOT ROW.	Med.	TBD		30%	$ 540,000	$ 162,000
PS-19	Jefferson Street	2nd Street to James Street (both) (Revised) Add $45K for RR X-ing. Entire project in UGB and County ROW	Med.	TBD		30%	$ 235,000	$ 70,500
PS-20	W. Main Street	Westfield Street to City Limits (north) (revised) County Road	Med.	TBD		30%	$ 150,000	$ 45,000
PS-21	Keene Avenue	Eureka Ave. to Anderson Drive (both) (revise	Med.	TBD		30%	$ 350,000	$ 105,000
PS-22	Ike Mooney Road	Existing Section to City Limits (both) Development Driven	Med.	TBD		30%	$ 260,000	$ 78,000
PS-23	2nd Street	Whittier Street/RR Tracks to Hobart Road (both) (revised) Need to address storm sewer before sidewalks can go in. Was budgeted at $543K	Med.	TBD		30%	$ 400,000	$ 120,000

Table 22- 2018 Transportation System CIP (Continued)

6-20 Year Transportation Project Summary								
Project Number	Project Name	Project Description	Priority	Project Start	Project Finish	SDC %	Project Cost (2013 $)	SDC Eligible
Pedestrian Sidewalk (PS), Pedestrian Pathway (PP), Pedestrian Crossings (PC), Audits (A)								
PS-25	Fiske Street	Main Street to Charles Street (both) (revised) Narrow ROW and creek will make it very difficult and likely require a retaining wall along the creek bank.	Low	TBD		30%	$ 160,000	$ 48,000
PS-26	2nd Street (gap infill)	Roths to D Street (east) (revised) Stared at Roths Vs Whittier. Cost is much lower than previously estimated	Low	TBD		30%	$ 45,000	$ 13,500
PS-27a	Eureka Ave.	Main Street to Keene Avenue (west)	Low	TBD		30%	$ 95,000	$ 28,500
PS-27b	Eureka Ave.	Keene Avenue to S City limits (both)	Low	TBD		30%	$ 475,000	$ 142,500
PS-28	Monitor Road	Hobart Road to Oak Street (west)	Low	TBD		30%	$ 250,000	$ 75,000
PS-29	Hobart Road	1st Street to Monitor Road (north)	Low	TBD		30%	$ 650,000	$ 195,000
PS-30	Hobart Road	1st Street east to Existing Section (south) (Revised) Storm Improvements need to go first. Will need to add a storm project to the 6-20yr storm master plan	Low	TBD		30%	$ 85,000	$ 25,500
PC-02	N Water Street/A Street	Crossing Enhancement (north)		TBD		0%	$ 11,000	$ -
PC-03	Water Street/Lewis Street	Refuge Median		TBD		0%	$ 28,000	$ -
PC-04	Water Street-Eugene Field	Crossing Enhancement (mid-block)	Complete	TBD		0%	$ 9,000	$ -
PC-05	Steelhammer Road	Crossing Enhancement (mid-block)		TBD		0%	$ 11,000	$ -
PC-07	1st Street	Bow Tie Lane (mid-block)		TBD		0%	$ 13,000	$ -
PC-08	Water Street/Wesley Street	Crossing Enhancement (south)	complete	TBD		0%	$ 9,000	$ -
PC-09	1st Street/Lewis Street	Crossing Enhancement (west)	Complete	TBD		0%	$ 6,000	$ -
PC-10	1st Street/B Street	Crossing Enhancement (south)		TBD		0%	$ 11,000	$ -
A-01	ADA Safety Audit and Annual Improvement Program			TBD		100%	$ 370,000	$ 370,000

Transportation System Current and Future Demand

Existing Transportation Demand

Demand for transportation facilities is measured in PM peak-hour vehicle trips (PM PHVTs). One PM PHVT represents one person beginning or ending a vehicular trip at a certain property during the afternoon rush hour. Based on data from both the U. S. Census Bureau and the Silverton Transportation System Plan Update (2016), we estimate that the transportation system is currently serving 6,946 PM PHVTs. The statistical process that was used to arrive at the current demand value is shown in Table 23.

Table 23 - Existing Transportation System Demand

	Existing PM Peak Hour Vehicle Trips					
TAZ	Households	Retail	Services	Other	Education	Total
1	43	-	-	-	-	43
2	1	-	19	268	-	288
3	180	-	20	1	157	358
4	69	-	-	10	-	79
5	25	-	-	4	-	29
6	49	-	1	-	-	50
7	50	8	40	-	-	98
8	-	12	31	-	-	43
9	3	107	88	10	63	271
10	-	-	146	-	-	146
11	173	-	689	2	-	864
12	14	80	57	1	-	152
13	39	-	1	-	-	40
14	84	1	24	6	-	115
15	159	-	40	-	-	199
16	20	2	73	-	-	95
17	14	-	83	-	63	160
18	30	32	239	32	1	334
19	4	96	130	206	-	436
20	39	-	10	-	-	49
21	134	-	1	3	-	138
22	188	5	27	3	1	224
23	176	-	16	-	4	196
24	129	-	30	63	-	222
25	211	-	35	19	-	265
26	105	-	4	2	-	111
27	411	-	7	21	-	439
28	243	-	7	10	-	260
29	56	-	1	-	-	57
30	7	-	2	42	55	106
31	282	-	5	18	-	305
32	15	5	17	22	1	60
33	321	-	30	1	49	401
34	297	-	14	1	-	312
Total	3,572	348	1,887	745	394	6,946

Source: Silverton Transportation System Plan Update; DKS Engineers; December 16, 2016; Trip Table Summary (PMPHVT)

Forecasted EDUs

We are estimating the City's transportation system will serve 9,699 PM PHVTs in 2030. These estimates imply growth of 4,669 PM PHVTs over the planning period, as shown in Table 23. The principal sources for the forecast are taken from the 2016 Silverton Transportation system Plan Update dated December, 2016. The specific drivers of growth in PMPHVTs are:

- Household land use growth
- Retail employment land use growth
- Service employment land use growth
- Educational land use growth
- Other employment land use growth

The Transportation System Plan growth constituents forecast is shown below in Table 24.

Table 24 - Forecasted Growth in Population and Employment

	2015	2037	CAGR[1]
Population	9,590	14,486	1.893%
Households	3,572	5,396	1.893%
Employees:			
Retail	348	522	1.860%
Service	1,887	2,449	1.192%
Education	394	513	1.207%
Other	745	819	0.431%
Total	3,374	4,303	1.112%

[1] CAGR - Compound Annual Growth Rate

Source: Silverton Transportation System Plan Update; Table 1; December 16, 2016

Based on these population and employment forecasts, the 2016 Transportation System Plan solved for total PMPHVT at the 2037 end date. Tables 25 and 26 show total PMPHVTs at 2037, and the growth in PMPHVTs from 2015 to 2037.

Table 25 - Forecasted PMPHVTs at 2037

	Future PM Peak Hour Vehicle Trips					
TAZ	Households	Retail	Services	Other	Education	Total
1	183	-	-	-	-	183
2	1	-	49	307	-	357
3	233	-	32	1	229	494
4	181	-	-	35	-	216
5	45	-	-	4	-	49
6	81	-	1	-	-	82
7	51	8	49	-	-	108
8	-	17	46	-	-	63
9	241	180	283	10	92	806
10	-	-	231	-	-	231
11	178	-	726	2	-	906
12	25	80	57	1	-	163
13	87	-	1	-	-	88
14	84	1	24	6	-	115
15	189	-	40	-	-	229
16	30	8	101	-	-	139
17	34	32	137	-	-	203
18	49	44	288	33	1	415
19	4	136	135	210	-	485
20	45	-	10	-	-	55
21	447	-	1	3	-	451
22	253	5	27	3	1	289
23	222	-	16	-	4	242
24	130	-	30	63	-	223
25	245	-	35	19	-	299
26	122	-	4	2	-	128
27	811	-	7	21	-	839
28	257	-	7	10	-	274
29	65	-	1	-	-	66
30	41	-	2	42	118	203
31	337	-	5	18	-	360
32	31	12	60	27	1	131
33	333	-	30	1	67	431
34	362	-	14	1	-	377
Total	5,396	522	2,449	819	513	9,699

Source: Silverton Transportation System Plan Update; DKS Engineers; December 16, 2016; Trip Table Summary (PMPHVT)

Table 26 - Forecasted Growth in PMPHVTs 2015-2037

	Growth PM Peak Hour Vehicle Trips					
TAZ	Households	Retail	Services	Other	Education	Total
1	140	-	-	-	-	140
2	-	-	30	39	-	69
3	53	-	12	(0)	72	137
4	112	-	-	25	-	137
5	20	-	-	-	-	20
6	32	-	-	-	-	32
7	1	-	9	-	-	10
8	-	5	15	-	-	20
9	238	73	195	-	29	535
10	-	-	85	-	-	85
11	5	-	37	-	-	42
12	11	-	-	-	-	11
13	48	-	-	-	-	48
14	-	-	-	-	-	-
15	30	-	-	-	-	30
16	10	6	28	-	-	44
17	20	32	54	-	(63)	43
18	20	12	49	1	-	81
19	-	40	5	4	-	49
20	5	-	-	-	-	5
21	313	-	-	-	-	313
22	65	-	-	-	-	65
23	46	-	-	-	-	46
24	2	-	-	-	-	2
25	34	-	-	-	-	34
26	17	-	-	-	-	17
27	400	-	-	-	-	400
28	14	-	-	-	-	14
29	9	-	-	-	-	9
30	34	-	-	-	63	97
31	55	-	-	-	-	55
32	16	7	43	5	-	70
33	12	-	-	(0)	18	30
34	65	-	-	-	-	65
Total	1,825	174	562	74	119	2,754

Source: Silverton Transportation System Plan Update; DKS Engineers; December 16, 2016; Trip Table Summary (PMPHVT)

Reimbursement Fee Calculations

The transportation reimbursement fee methodology mirrors that used for the water and wastewater reimbursement fee. The methodological steps in its construction are restated here.

Step 1: Calculate the original cost of transportation fixed assets in service. From this starting point, eliminate any assets that do not conform to the ORS 223.299 definition of a capital improvement. This results in the **adjusted original cost of transportation fixed assets**.

Step 2: Subtract from the adjusted original cost of transportation fixed assets in service the accumulated depreciation of those fixed assets. This arrives at the **modified book value of transportation fixed assets in service**.

Step 3: Subtract from the modified book value of transportation assets in service any grant funding or contributed capital. This arrives at the **modified book value of transportation fixed assets in service net of grants and contributed capital**.

Step 4: Subtract from the modified book value of transportation fixed assets in service net of grants and contributed capital any principal outstanding on long term debt used to finance those assets. This arrives a **gross transportation reimbursement fee basis**.

Step 5: Subtract from the gross transportation reimbursement fee basis the fund balance held in the Transportation Reimbursement SDC fund (if available). This arrives at the **net transportation reimbursement fee basis**.

Step 6: Divide the net transportation reimbursement fee basis by the sum of existing and future PM PHVTs to arrive at the **unit net reimbursement fee**.

The actual data that was used to calculate the total transportation reimbursement fee is shown below in Table 27.

Table 27 - Calculation of the Transportation Reimbursement Fee

Original Cost of transportation infrastructure[1]	
Land	$ 409,552
Land improvements	602,510
Improvements	7,062,163
Buildings	61,501
Equipment	332,167
Subtotal original cost	8,467,893
Accumulated Depreciation[1]	
Land	-
Land improvements	232,766
Improvements	1,448,233
Buildings	59,349
Equipment	207,601
Subtotal accumulated depreciation	1,947,949
Book value of transportation infrastrucute	$ 6,519,944
Gross reimbursement cost basis	$ 6,519,944
Eliminating entries:	
Street reimbursement SDC fund balance	380,222
Principal outstanding on bonds, notes, and loans payable	-
Grants, net of amortization	-
Developer contributions	-
Subtotal eliminating entries	380,222
Net reimbursement cost basis	$ 6,139,722
Estimated existing and future PM peak hour vehicle trips added over 20 years	9,699
Transportation reimbursement fee per PM peak hour vehicle trip	$ 633

[1] Source: Silverton Accounting Summary Report - Capitalized Assets as of June 30, 2018

Improvement Fee Calculations

The calculation of the transportation improvement fee also follows the logic that was used to calculate the water improvement fee. As in the case of water, this study continues to use the improvements-driven method, and has relied on the capital improvement plans, and plan updates for the transportation infrastructure. Under this methodology, only three steps are required to arrive at the improvement fee. These steps are:

Step 1: Accumulate the future cost of planned improvements needed to serve growth. This arrives at **the gross improvement fee basis**.

Step 2: Subtract from the gross improvement fee basis the fund balance held in the Transportation Improvement SDC Fund. This arrives at **the net transportation improvement fee basis**.

Step 3: Divide the net transportation improvement fee basis by the forecasted number of growth PM PHVTs over the planning period. This arrives at **the total transportation improvement fee**.

The actual data that was used to calculate the total transportation improvement fee is shown below in Table 28.

Table 28 - Calculation of the Transportation Improvement Fee

Project Description	Estimated Cost of Improvements in 2018 Dollars	Project Cost Attributed to Existing Demands	Project Cost Attributable to Future Demands
Intersection Improvements (I), Studies (S), Connector Roadway (C)	$ 18,892,000	$ 13,816,000	$ 5,076,000
Roadway Reconstruction (RR)	9,773,000	9,773,000	-
Bicycle Lanes (BL)	5,700,624	3,975,037	1,725,587
Pedestrian Sidewalk (PS), Pedestrian Pathway (PP), Pedestrian Crossings (PC), and Audits (A)	8,219,000	5,523,700	2,695,300
Total	$ 42,584,624	$ 33,087,737	$ 9,496,887

Total Improvement Fee Eligible Costs for Future System Improvements	$ 9,496,887
less: Transportation SDC Fund balance as of June 30, 2018	1,378,244
Adjusted Improvement Fee Eligible Costs for Future System Improvements	$ 8,118,643
Estimated PM peak hour vehicle trips added over 20 years	2,754
Transportation improvement fee per PM peak hour vehicle trip	$ 2,948

Transportation SDC Model Summary

The 2019 transportation SDC methodology update was done in accordance with Silverton Municipal Code Chapter 13.70, and with the benefit of adopted capital improvement plans and plan updates for transportation services. We recommend the City update the SDC charge and methodology to reflect the current capital improvement program. Our analysis indicates the City can charge a maximum of $3,760 per PM PHVT.

To charge the appropriate SDC, the City must estimate how many PM PHVTs will be generated by the development in question. That number can then be multiplied by $3,760 to determine the amount of SDC owed by new development projects.

The number of PM PHVTs that a property will generate is a function of the increase in scope and scale of activities that will occur on that property. By "scope of activities," we mean land use. For example, a new single-family residence will generate trip-ends differently from a new retail store of the same size. By "scale of activities," we mean some measure of quantity. For residential land uses, the number of dwelling units is an appropriate measure of scale. For many commercial and industrial land uses, building floor area is the best measure. For example, a 20,000-square-foot store is likely to generate twice the number of trip-ends as a 10,000-square-foot store of the same type. Table 29 presents proposed transportation SDCs per unit of scale for several land uses in the 9th edition of Trip Generation Manual, published by the Institute of Transportation Engineers (ITE):

Table 29 - Proposed Transportation SDCs by ITE Code

ITE Code	Land Use	Total Trip Ends	Diverted/Linked Trips	Pass-by Trips	Diverted/Linked and pass-by Trip Adjustment	Primary Trip Ends	Improve.	Reimb.	Compliance	Total SDC	Basis for Calculating a Customer's SDC
Port and Terminal (Land Uses 000-099)											
010	Waterport/Marine Terminal*	17.15	0.00%	0.00%	-	17.15	50,564	10,857	3,071	64,492	Berth
021	Commercial Airport	5.75	0.00%	0.00%	-	5.75	16,951	3,640	1,030	21,620	Average flights per day
022	General Aviation Airport	1.46	0.00%	0.00%	-	1.46	4,304	924	261	5,490	Employee
030	Intermodal Truck Terminal	6.55	0.00%	0.00%	-	6.55	19,309	4,146	1,173	24,628	Acre
090	Park-an-Ride Lot with Bus Service	0.62	0.00%	0.00%	-	0.62	1,828	392	111	2,331	Parking space
093	Light Rail Transit Station with Parking	1.24	0.00%	0.00%	-	1.24	3,656	785	222	4,662	Parking space
Industrial (Land Uses 100-199)											
110	General light industrial	0.97	0.00%	0.00%	-	0.97	2,860	614	174	3,647	1,000 square feet of gross floor area
120	General heavy industrial	0.68	0.00%	0.00%	-	0.68	2,005	430	122	2,557	1,000 square feet of gross floor area
130	Industrial park	0.85	0.00%	0.00%	-	0.85	2,506	538	152	3,196	1,000 square feet of gross floor area
140	Manufacturing	0.73	0.00%	0.00%	-	0.73	2,152	462	131	2,745	1,000 square feet of gross floor area
150	Warehousing	0.32	0.00%	0.00%	-	0.32	943	203	57	1,203	1,000 square feet of gross floor area
151	Mini-warehouse	0.26	0.00%	0.00%	-	0.26	766	165	47	978	1,000 square feet of gross floor area
152	High-Cube Warehouse/Distribution Center	0.12	0.00%	0.00%	-	0.12	354	76	21	451	1,000 square feet of gross floor area
160	Data center	0.09	0.00%	0.00%	-	0.09	265	57	16	338	1,000 square feet of gross floor area
170	Utilities	0.76	0.00%	0.00%	-	0.76	2,240	481	136	2,858	1,000 square feet of gross floor area
Residential (Land Uses 200-299)											
210	Single family detached housing	1.00	0.00%	0.00%	-	1.00	2,948	633	179	3,760	Dwelling unit
220	Apartment	0.62	0.00%	0.00%	-	0.62	1,828	392	111	2,331	Dwelling unit
221	Low-Rise Apartment	0.58	0.00%	0.00%	-	0.58	1,710	367	104	2,181	Occupied dwelling unit
222	High-Rise Apartment	0.35	0.00%	0.00%	-	0.35	1,032	222	63	1,316	Dwelling unit
223	Mid-Rise Apartment	0.39	0.00%	0.00%	-	0.39	1,150	247	70	1,466	Dwelling unit
224	Rental Townhouse	0.72	0.00%	0.00%	-	0.72	2,123	456	129	2,707	Dwelling unit
230	Residential condominium/townhouse	0.52	0.00%	0.00%	-	0.52	1,533	329	93	1,955	Dwelling unit
231	Low-Rise Residential Condominium/Townhouse	0.78	0.00%	0.00%	-	0.78	2,299	494	140	2,933	Dwelling unit
232	High-Rise Residential Condominium/Townhouse	0.38	0.00%	0.00%	-	0.38	1,120	241	68	1,429	Dwelling unit
233	Luxury Condominium/Townhouse	0.55	0.00%	0.00%	-	0.55	1,621	348	98	2,068	Occupied dwelling unit
240	Mobile home park	0.59	0.00%	0.00%	-	0.59	1,739	373	106	2,218	Occupied dwelling unit
251	Senior Adult Housing - Detatched	0.27	0.00%	0.00%	-	0.27	796	171	48	1,015	Dwelling unit
252	Senior Adult Housing - Attached	0.25	0.00%	0.00%	-	0.25	737	158	45	940	Dwelling unit
253	Congregate Care Facility	0.17	0.00%	0.00%	-	0.17	501	108	30	639	Dwelling unit
254	Assisted living	0.22	0.00%	0.00%	-	0.22	649	139	39	827	Bed
255	Continuing Care Retirement Community	0.16	0.00%	0.00%	-	0.16	472	101	29	602	Unit
260	Recreational Homes	0.26	0.00%	0.00%	-	0.26	766	165	47	978	Dwelling unit
265	Timeshare	0.75	0.00%	0.00%	-	0.75	2,211	475	134	2,820	Dwelling unit
270	Residential Planned Unit Development	0.62	0.00%	0.00%	-	0.62	1,828	392	111	2,331	Dwelling unit

Table 29 - Proposed Transportation SDCs by ITE Code (Continued)

ITE Code	Land Use	Total Trip Ends	Diverted/Linked Trips	Pass-by Trips	Diverted/Linked and pass-by Trip Adjustment	Primary Trip Ends	Improve.	Reimb.	Compliance	Total SDC	Basis for Calculating a Customer's SDC
Lodging (Land Uses 300-399)											
310	Hotel	0.60	0.00%	0.00%	-	0.60	1,769	380	107	2,256	Room
311	All Suites Hotel	0.40	0.00%	0.00%	-	0.40	1,179	253	72	1,504	Room
312	Business Hotel	0.62	0.00%	0.00%	-	0.62	1,828	392	111	2,331	Occupied Room
320	Motel	0.47	0.00%	0.00%	-	0.47	1,386	298	84	1,767	Room
330	Resort Hotel	0.42	0.00%	0.00%	-	0.42	1,238	266	75	1,579	Room
Recreational (Land Uses 400-499)											
411	City Park*	0.19	0.00%	0.00%	-	0.19	557	120	34	711	Acre
412	County Park	0.09	0.00%	0.00%	-	0.09	265	57	16	338	Acre
413	State Park*	0.07	0.00%	0.00%	-	0.07	192	41	12	244	Acre
414	Water Slide Park	1.92	0.00%	0.00%	-	1.92	5,660	1,215	344	7,219	1,000 square feet of gross floor area
415	Beach Park	1.30	0.00%	0.00%	-	1.30	3,832	823	233	4,888	Acre
416	Campground/Recreational Vehicle Park	0.27	0.00%	0.00%	-	0.27	796	171	48	1,015	Occupied camp site
417	Regional park	0.20	0.00%	0.00%	-	0.20	590	127	36	752	Acre
418	National Monument	0.42	0.00%	0.00%	-	0.42	1,238	266	75	1,579	Acre
420	Marina	0.19	0.00%	0.00%	-	0.19	560	120	34	714	Berth
430	Golf course	0.30	0.00%	0.00%	-	0.30	884	190	54	1,128	Acre
431	Miniature Golf Course	0.33	0.00%	0.00%	-	0.33	973	209	59	1,241	Hole
432	Golf Driving Range	1.25	0.00%	0.00%	-	1.25	3,685	791	224	4,700	Tees/Driving Position
433	Batting Cages	2.22	0.00%	0.00%	-	2.22	6,545	1,405	397	8,347	Cage
435	Multipurpose Recreational Facility	3.58	0.00%	0.00%	-	3.58	10,554	2,266	641	13,461	1,000 square feet of gross floor area
437	Bowling Alley	1.71	0.00%	0.00%	-	1.71	5,041	1,082	306	6,430	1,000 square feet of gross floor area
440	Adult Cabaret	38.67	0.00%	0.00%	-	38.67	113,999	24,478	6,924	145,401	1,000 square feet of gross floor area
441	Live Theater	0.02	0.00%	0.00%	-	0.02	59	13	4	75	Seat
443	Movie Theater without Matinee	24.00	0.00%	0.00%	-	24.00	70,752	15,192	4,297	90,241	Movie Screen
444	Movie Theater with Matinee - Friday pm peak hour	45.91	0.00%	0.00%	-	45.91	135,343	29,061	8,220	172,624	Movie screen
445	Multiplex Movie Theater - Friday pm peak hour	22.76	0.00%	0.00%	-	22.76	67,096	14,407	4,075	85,579	Movie screen
452	Horse Racetrack	0.06	0.00%	0.00%	-	0.06	177	38	11	226	Seat
453	Automobile Racetrack - Saturday peak hour	0.28	0.00%	0.00%	-	0.28	825	177	50	1,053	Attendee
454	Dog Racetrack	0.15	0.00%	0.00%	-	0.15	442	95	27	564	Attendee
460	Arena*	3.33	0.00%	0.00%	-	3.33	9,826	2,110	597	12,532	Acre
465	Ice Skating Rink	2.36	0.00%	0.00%	-	2.36	6,957	1,494	423	8,874	1,000 square feet of gross floor area
466	Snow Ski Area	26.00	0.00%	0.00%	-	26.00	76,648	16,458	4,655	97,761	Lift
473	Casino/Video Lottery Establishment	13.43	0.00%	0.00%	-	13.43	39,592	8,501	2,405	50,497	1,000 square feet of gross floor area
480	Amusement Park	3.95	0.00%	0.00%	-	3.95	11,645	2,500	707	14,852	Acre
481	Zoo*	11.49	0.00%	0.00%	-	11.49	33,867	7,272	2,057	43,195	Acre
488	Soccer Complex	17.17	0.00%	0.00%	-	17.17	50,617	10,869	3,074	64,560	Field
490	Tennis Courts	3.88	0.00%	0.00%	-	3.88	11,438	2,456	695	14,589	Court
491	Racquet/Tennis Club	3.35	0.00%	0.00%	-	3.35	9,876	2,121	600	12,596	Court
492	Health/Fitness Club	3.53	0.00%	0.00%	-	3.53	10,406	2,234	632	13,273	1,000 square feet of gross floor area
493	Athletic Club	5.96	0.00%	0.00%	-	5.96	17,570	3,773	1,067	22,410	1,000 square feet of gross floor area
495	Recreational Community Center	2.74	0.00%	0.00%	-	2.74	8,078	1,734	491	10,303	1,000 square feet of gross floor area

Table 29 - Proposed Transportation SDCs by ITE Code (Continued)

ITE Code	Land Use	Total Trip Ends	Diverted/Linked Trips	Pass-by Trips	Diverted/Linked and pass-by Trip Adjustment	Primary Trip Ends	Improve.	Reimb.	Compliance	Total SDC	Basis for Calculating a Customer's SDC
Institutional (Land Uses 500-599)											
501	Military Base	0.39	0.00%	0.00%	-	0.39	1,150	247	70	1,466	Employee
520	Elementary School	1.21	0.00%	0.00%	-	1.21	3,567	766	217	4,550	1,000 square feet of gross floor area
522	Middle School/Junior High School	1.19	0.00%	0.00%	-	1.19	3,508	753	213	4,474	1,000 square feet of gross floor area
530	High School	0.97	0.00%	0.00%	-	0.97	2,860	614	174	3,647	1,000 square feet of gross floor area
534	Private School (K-8) - pm peak hour generator	6.53	0.00%	0.00%	-	6.53	19,250	4,133	1,169	24,553	1,000 square feet of gross floor area
536	Private School (K-12) - pm peak hour generator	5.50	0.00%	0.00%	-	5.50	16,214	3,482	985	20,680	1,000 square feet of gross floor area
540	Junior/Community College	2.54	0.00%	0.00%	-	2.54	7,488	1,608	455	9,551	1,000 square feet of gross floor area
550	University/College	0.79	0.00%	0.00%	-	0.79	2,329	500	141	2,970	Employee
560	Church	0.55	0.00%	0.00%	-	0.55	1,621	348	98	2,068	1,000 square feet of gross floor area
561	Synagogue	1.69	0.00%	0.00%	-	1.69	4,982	1,070	303	6,354	1,000 square feet of gross floor area
562	Mosque - pm peak hour generator	11.02	0.00%	0.00%	-	11.02	32,487	6,976	1,973	41,436	1,000 square feet of gross floor area
565	Day Care Center	12.34	0.00%	0.00%	-	12.34	36,378	7,811	2,209	46,399	1,000 square feet of gross floor area
566	Cemetary	0.84	0.00%	0.00%	-	0.84	2,476	532	150	3,158	Acre
571	Prison	2.91	0.00%	0.00%	-	2.91	8,579	1,842	521	10,942	1,000 square feet of gross floor area
580	Museum	0.18	0.00%	0.00%	-	0.18	531	114	32	677	1,000 square feet of gross floor area
590	Library	7.30	0.00%	0.00%	-	7.30	21,520	4,621	1,307	27,448	1,000 square feet of gross floor area
591	Lodge/Fraternal Organization	0.03	0.00%	0.00%	-	0.03	88	19	5	113	Member
Medical (Land Uses 600-699)											
610	Hospital	0.93	0.00%	0.00%	-	0.93	2,742	589	167	3,497	1,000 square feet of gross floor area
620	Nursing Home	0.74	0.00%	0.00%	-	0.74	2,182	468	132	2,782	1,000 square feet of gross floor area
630	Clinic	5.18	0.00%	0.00%	-	5.18	15,271	3,279	927	19,477	1,000 square feet of gross floor area
640	Animal Hospital/Veterinary Clinic	4.72	0.00%	0.00%	-	4.72	13,915	2,988	845	17,747	1,000 square feet of gross floor area
Office (Land Uses 700-799)											
710	General office building	1.49	0.00%	0.00%	-	1.49	4,393	943	267	5,602	1,000 square feet of gross floor area
714	Corporate Headquarters Building	1.41	0.00%	0.00%	-	1.41	4,157	893	252	5,302	1,000 square feet of gross floor area
715	Single Tenant Office Building	1.74	0.00%	0.00%	-	1.74	5,130	1,101	312	6,542	1,000 square feet of gross floor area
720	Medical-dental office building	3.57	0.00%	0.00%	-	3.57	10,524	2,260	639	13,423	1,000 square feet of gross floor area
730	Government Office Building	1.21	0.00%	0.00%	-	1.21	3,567	766	217	4,550	1,000 square feet of gross floor area
731	State Motor Vehicles Department	17.09	0.00%	0.00%	-	17.09	50,381	10,818	3,060	64,259	1,000 square feet of gross floor area
732	United States Post Office	11.22	0.00%	0.00%	-	11.22	33,077	7,102	2,009	42,188	1,000 square feet of gross floor area
733	Government Office Complex	2.85	0.00%	0.00%	-	2.85	8,402	1,804	510	10,716	1,000 square feet of gross floor area
750	Office park - pm peak hour	1.48	0.00%	0.00%	-	1.48	4,363	937	265	5,565	1,000 square feet of gross floor area
760	Research and development center - pm peak hour	1.07	0.00%	0.00%	-	1.07	3,154	677	192	4,023	1,000 square feet of gross floor area
770	Business park - pm peak hour	1.26	0.00%	0.00%	-	1.26	3,714	798	226	4,738	1,000 square feet of gross floor area

Table 29 - Proposed Transportation SDCs by ITE Code (Continued)

ITE Code	Land Use	Total Trip Ends	Diverted/Linked Trips	Pass-by Trips	Diverted/Linked and pass-by Trip Adjustment	Primary Trip Ends	Improve.	Reimb.	Compliance	Total SDC	Basis for Calculating a Customer's SDC
Retail (Land Uses 800-899)											
810	Tractor Supply Store	1.40	0.00%	0.00%	-	1.40	4,127	886	251	5,264	1,000 square feet of gross floor area
811	Construction Equipment Rental Store	0.99	0.00%	0.00%	-	0.99	2,919	627	177	3,722	1,000 square feet of gross floor area
812	Building Materials and Lumber Store	4.49	0.00%	0.00%	-	4.49	13,237	2,842	804	16,883	1,000 square feet of gross floor area
813	Free Standing Discount Super Store	4.35	0.00%	28.00%	1.22	3.13	9,233	1,983	561	11,776	1,000 square feet of gross floor area
814		6.82	0.00%	0.00%	-	6.82	20,105	4,317	1,221	25,644	1,000 square feet of gross floor area
815	Free Standing Discount Store	4.98	35.25%	17.00%	2.60	2.38	7,010	1,505	426	8,941	1,000 square feet of gross floor area
816	Hardware/Paint Store	4.84	29.50%	26.00%	2.69	2.15	6,349	1,363	386	8,098	1,000 square feet of gross floor area
817	Nursery (Garden Center)	6.94	0.00%	0.00%	-	6.94	20,459	4,393	1,243	26,095	1,000 square feet of gross floor area
818	Nursery (Wholesale)	5.17	0.00%	0.00%	-	5.17	15,241	3,273	926	19,439	1,000 square feet of gross floor area
820	Shopping Center	3.71	15.86%	34.00%	1.85	1.86	5,484	1,178	333	6,994	1,000 square feet of gross leasable area
823	Factory Outlet Center	2.29	0.00%	0.00%	-	2.29	6,751	1,450	410	8,611	1,000 square feet of gross floor area
826	Specialty Retail Center	2.71	0.00%	0.00%	-	2.71	7,989	1,715	485	10,190	1,000 square feet of gross leasable area
841	Automobile Sales	2.62	0.00%	0.00%	-	2.62	7,724	1,658	469	9,851	1,000 square feet of gross floor area
842	Recreational Vehicle Sales	2.54	0.00%	0.00%	-	2.54	7,488	1,608	455	9,551	1,000 square feet of gross floor area
843	Automobile Parts Sales	5.98	13.00%	43.00%	3.35	2.63	7,757	1,666	471	9,893	1,000 square feet of gross floor area
848	Tire Store	4.15	3.33%	28.00%	1.30	2.85	8,401	1,804	510	10,715	1,000 square feet of gross floor area
849	Tire Superstore	2.11	0.00%	0.00%	-	2.11	6,220	1,336	378	7,934	1,000 square feet of gross floor area
850	Supermarket	9.48	25.25%	36.00%	5.81	3.67	10,829	2,325	658	13,813	1,000 square feet of gross floor area
851	Convenience Market (Open 24 Hours)	52.41	6.47%	61.00%	35.36	17.05	50,255	10,791	3,052	64,098	1,000 square feet of gross floor area
852	Convenience Market (Open 15-16 Hours)	34.57	12.14%	63.50%	26.15	8.42	24,831	5,332	1,508	31,671	1,000 square feet of gross floor area
853	Convenience Market with Gasoline Pumps	50.92	17.80%	66.00%	42.67	8.25	24,318	5,222	1,477	31,017	1,000 square feet of gross floor area
854	Discount Supermarket	8.34	23.20%	23.00%	3.85	4.49	13,227	2,840	803	16,871	1,000 square feet of gross floor area
857	Discount Club	4.18	0.00%	0.00%	-	4.18	12,323	2,646	748	15,717	1,000 square feet of gross floor area
860	Wholesale Market	0.88	0.00%	0.00%	-	0.88	2,594	557	158	3,309	1,000 square feet of gross floor area
861	Sporting Goods Superstore	1.84	0.00%	0.00%	-	1.84	5,424	1,165	329	6,918	1,000 square feet of gross floor area
862	Home Improvement Superstore	2.33	8.00%	48.00%	1.30	1.03	3,022	649	184	3,855	1,000 square feet of gross floor area
863	Electronics Superstore	4.50	33.00%	40.00%	3.29	1.22	3,582	769	218	4,568	1,000 square feet of gross floor area
864	Toy/Children's Superstore	4.99	0.00%	0.00%	-	4.99	14,711	3,159	893	18,763	1,000 square feet of gross floor area
865	Baby Superstore	1.82	0.00%	0.00%	-	1.82	5,365	1,152	326	6,843	1,000 square feet of gross floor area
866	Pet Supply Superstore	3.38	0.00%	0.00%	-	3.38	9,964	2,140	605	12,709	1,000 square feet of gross floor area
867	Office Supply Superstore	3.40	0.00%	0.00%	-	3.40	10,023	2,152	609	12,784	1,000 square feet of gross floor area
868	Book Superstore	15.82	0.00%	0.00%	-	15.82	46,637	10,014	2,833	59,484	1,000 square feet of gross floor area
869	Discount Home Furnishing Superstore	1.57	0.00%	0.00%	-	1.57	4,628	994	281	5,903	1,000 square feet of gross floor area
872	Bed and Linen Superstore	2.22	0.00%	0.00%	-	2.22	6,545	1,405	397	8,347	1,000 square feet of gross floor area
875	Department Store	1.87	0.00%	0.00%	-	1.87	5,513	1,184	335	7,031	1,000 square feet of gross floor area
876	Apparel Store	3.83	0.00%	0.00%	-	3.83	11,291	2,424	686	14,401	1,000 square feet of gross floor area
879	Arts and Crafts Store	6.21	0.00%	0.00%	-	6.21	18,307	3,931	1,112	23,350	1,000 square feet of gross floor area
880	Pharmacy/Drugstore without Drive-Through	8.40	4.67%	53.00%	4.84	3.56	10,483	2,251	637	13,371	1,000 square feet of gross floor area
881	Pharmacy/Drugstore with Drive-Through	9.91	13.00%	49.00%	6.14	3.77	11,102	2,384	674	14,160	1,000 square feet of gross floor area
890	Furniture Store	0.45	10.33%	53.00%	0.29	0.17	486	104	30	620	1,000 square feet of gross floor area
896	DVD/Video Store	13.60	0.00%	0.00%	-	13.60	40,093	8,609	2,435	51,137	1,000 square feet of gross floor area
897	Medical Equipment Store	1.24	0.00%	0.00%	-	1.24	3,656	785	222	4,662	1,000 square feet of gross floor area

Table 29 - Proposed Transportation SDCs by ITE Code (Continued)

ITE Code	Land Use	Total Trip Ends	Diverted/Linked Trips	Pass-by Trips	Diverted/Linked and pass-by Trip Adjustment	Primary Trip Ends	Improve.	Reimb.	Compliance	Total SDC	Basis for Calculating a Customer's SDC
Services (Land Uses 900-999)											
911	Walk-in Bank	12.13	0.00%	0.00%	-	12.13	35,759	7,678	2,172	45,609	1,000 square feet of gross floor area
912	Drive-in Bank	24.30	25.67%	47.00%	17.66	6.64	19,581	4,204	1,189	24,974	1,000 square feet of gross floor area
918	Hair Salon	1.45	0.00%	0.00%	-	1.45	4,275	918	260	5,452	1,000 square feet of gross floor area
920	Copy, Print and Express Ship Store	7.41	0.00%	0.00%	-	7.41	21,845	4,691	1,327	27,862	1,000 square feet of gross floor area
925	Drinking Place	11.34	0.00%	0.00%	-	11.34	33,430	7,178	2,030	42,639	1,000 square feet of gross floor area
931	Quality Restaurant	7.49	13.50%	44.00%	4.31	3.18	9,384	2,015	570	11,969	1,000 square feet of gross floor area
932	High-Turnover (Sit Down) Restaurant	9.85	17.25%	43.00%	5.93	3.92	11,543	2,478	701	14,722	1,000 square feet of gross floor area
933	Fast-food restaurant without drive-through	26.15	17.25%	43.00%	15.76	10.39	30,643	6,580	1,861	39,084	1,000 square feet of gross floor area
934	Fast-food restaurant with drive-through	32.65	9.06%	50.00%	19.28	13.37	39,410	8,462	2,394	50,266	1,000 square feet of gross floor area
935	Fast-food restaurant with drive-through and no indoor seating	44.99	0.00%	89.00%	40.04	4.95	14,589	3,133	886	18,608	1,000 square feet of gross floor area
936	Coffee/donut shop without drive-through	40.75	17.25%	43.00%	24.55	16.20	47,752	10,253	2,900	60,906	1,000 square feet of gross floor area
937	Coffee/donut shop with drive-through	42.80	9.06%	50.00%	25.28	17.52	51,661	11,093	3,138	65,892	1,000 square feet of gross floor area
938	Coffee/donut kiosk	75.00	9.06%	50.00%	44.29	30.71	90,528	19,438	5,498	115,465	1,000 square feet of gross floor area
939	Bread/Donut/Bagel Shop without Drive-Through Window	28.00	0.00%	0.00%	-	28.00	82,544	17,724	5,013	105,281	1,000 square feet of gross floor area
940	Bread/Donut/Bagel Shop with Drive-Through Window	18.99	0.00%	0.00%	-	18.99	55,983	12,021	3,400	71,403	1,000 square feet of gross floor area
941	Quick Lubrication Vehicle Shop	5.19	0.00%	0.00%	-	5.19	15,300	3,285	929	19,515	Servicing Position
942	Automobile Care Center	3.11	0.00%	0.00%	-	3.11	9,168	1,969	557	11,694	1,000 sq. ft. of occupied gross leasable area
943	Automobile Parts and Service Center	4.46	0.00%	0.00%	-	4.46	13,148	2,823	799	16,770	1,000 square feet of gross floor area
944	Gasoline/service station	13.87	23.00%	42.00%	9.02	4.85	14,311	3,073	869	18,253	Vehicle fueling position
945	Gasoline/service station with convenience market	13.51	31.22%	56.00%	11.78	1.73	5,089	1,093	309	6,491	Vehicle fueling position
946	Gasoline/service station with convenience market and car wash	13.86	27.11%	49.00%	10.55	3.31	9,761	2,096	593	12,450	Vehicle fueling position
947	Self-Service Car Wash	5.54	0.00%	0.00%	-	5.54	16,332	3,507	992	20,831	Wash stall
948	Automated Car Wash	14.12	0.00%	0.00%	-	14.12	41,626	8,938	2,528	53,092	1,000 square feet of gross floor area
950	Truck Stop	13.63	0.00%	0.00%	-	13.63	40,181	8,628	2,440	51,249	1,000 square feet of gross floor area

* No ITE PM peak hour trip generation for this code/category, the trip generation shown is ITE weekday average divided by ten.

Source: ITE, Trip Generation Manual, 9th edition

PM peak vehicle trips expressed in trip ends on a weekday, peak hour of adjacent street traffic, one hour, between 4:00 pm and 6:00 pm unless otherwise noted

Parks SDCs

The 2008 Parks and Trails Master Plan Levels of Service

In 2008, the City completed a parks master plan (the plan) addressing parks needs through the year 2028. The plan and this park SDC methodology update rely on levels of service (LOS) to determine the adequacy/needs for current and future parks and trails infrastructure. To determine adequacy, park and recreation providers typically measure existing parklands and facilities and compare them against established standards, typically LOS Standards. LOS standards are measures of the amount of public recreation parklands and facilities being provided to meet that jurisdiction's basic needs and expectations. For example, the amount of parkland currently needed in a particular jurisdiction may be determined by comparing the ratio of existing developed park acres per 1,000 residents (by all providers within the jurisdiction) to the jurisdiction's desired level of parks relative to population. The gap between the two ratios is the currently needed park acreage. As the population grows, the objective is to provide enough additional acreage to maintain the jurisdiction's desired ratio of park acres to 1,000 residents. These ratios can provide insight and act as tools to determine the amount of parkland or trails needed to meet current and future recreation needs.

For this parks SDC update, the project team established recommended parks and trails LOS (by parks classification) for the City based on the 2013-2017 Statewide Comprehensive Outdoor Recreation Plan (SCORP). The SCORP recommended Oregon LOS guidelines were developed after reviewing the National Recreation and Parks Association (NRPA) guidelines and the results from the 2014 statewide average guidelines survey. The recommended Plan parks LOS by parks category are shown below in Table 30.

Table 30 - 2015 Parks Master Plan LOS Standards for Silverton

Parkland Type	Average Planning LOS Guidelines in Oregon (Acres /1,000 population)	NRPA Standard LOS Guidelines (Acres /1,000 population)	Recommended Oregon LOS Guidelines (Acres /1,000 population)
Pocket Parks	0.16	0.25 to 0.5	0.25 to 0.5
Urban Plaza Parks	0.18	None	0.1 to 0.2
Neighborhood Parks	1.27	1.0 to 2.0	1.0 to 2.0
Community Parks	2.76	5.0 to 8.0	2.0 to 6.0
Regional Parks	8.99	5.0 to 10.0	5.0 to 10.0
Nature Parks	2.74	None	2.0 to 6.0
Special Use Parks	0.38	None	None
Totals	-	6.25 to 10.5 developed	6.25 to 12.5

A "trail" includes multi-use, pedestrian, and soft surface trails that accommodate a variety of activities such as walking, running, biking, dog walking, rollerblading, skateboarding, and horseback riding. Multi-use trails are designed for use by pedestrians, bicyclists, skateboarders, wheelchairs, and other non-motorized vehicle users. Such trails may be located within parks or along existing streets and roadways as part of the citywide transportation system. This has ramifications for a city like Silverton, where almost half of its trail system is within parks. For trails, the statewide average planning LOS Guidelines

are at 0.62 miles per 1,000 residents and the SCORP recommended LOS for Oregon is anywhere between 0.5 to 1.5 miles of trails per resident. For this park SDC study, we established a minimum trails LOS of 0.5 miles per 1,000 residents with both the current population and a population projection for 2037.

Having stabled the LOS standards for park lands and trails, the next step is to compare the City's current parks and trails inventory to the standard, and analyze the surpluses/deficiencies by parks category. That data is shown below in Table 31.

Table 31 - Existing Parks and Trails LOS Surplus/Deficiency

	Acres Available				Recommended LOS[1]			
Classification and Park Name	Gross	Net	Linear Miles	Current Level of Service[1]	Low	High	LOS Surplus or (Deficiency)	% Capacity Remaining
Pocket Parks:								
Pioneer Village park	2.00	2.00						
Lincoln Street park	0.30	0.30						
	2.30	2.30		0.225	0.250	0.500	(0.025)	Zero
Urban Plaza Parks:	-	-		0.000	0.100	0.200	(0.100)	Zero
Neighborhood Parks:	-	-		0.000	1.000	2.000	(1.000)	Zero
Community Parks:								
Coolidge & McClaine park	8.30	8.30						
Old Mill park	3.85	3.85						
Lincoln Street park	3.85	3.85						
	16.00	16.00		1.566	2.000	6.000	(0.434)	Zero
Nature Parks:								
Pettit property	80.00	26.67						
Wetland area	9.00	3.00						
	89.00	29.67		2.904	2.000	6.000	0.904	45.2%
Regional Parks:								
Silverton Reservoir	60.00	20.00						
Marine park	80.00	26.67						
	140.00	46.67		4.569	5.000	10.000	(0.431)	Zero
Subtotal Parks	247.30	94.63		9.265	10.350	24.700	(1.085)	Zero
Regional Trail Systems (linear miles):			2.00	0.196	0.500	1.500	(0.304)	Zero

Notes:

[1] Oregon Parks and Recreation Department 2013-17 Statewide Comprehensive Outdoor Recreation Plan (SCORP); PSU 2017 estimated population; level of service expressed in units per 1,000 residents

10,214

As the data in Table 31 shows, currently, the City is "park deficient" in all park categories except Nature Parks. Because the nature parks acreage inventory is very large, on a citywide basis, it skews the overall parks system to a modest net LOS deficit of 1.085 acres per 1,000 population. This will impact the calculation of the parks SDC reimbursement fee in that the current LOS implies 100% of the City's current parks and trails capacity is being absorbed by the City's current population.

Existing and Projected Future Demand for Parks and Trails

Growth should be measured in units that most directly reflect the source of demand. In the case of parks, the most applicable units of growth are population and, where appropriate, employees (or new jobs). However, the units in which demand is expressed may not be the same as the units in which SDC rates are charged. Many SDCs, for example, are charged on the basis of new dwelling units. Therefore, conversion is often necessary from units of demand to units of payment. For example, using an average number of residents per household, the number of new residents can be converted to the number of new dwelling units.

Parks and recreation facilities benefit City residents, businesses, non-resident employees, and visitors. The methodology used to update the City's parks and recreation SDCs establishes the required connection between the demands of growth and the SDC by identifying specific types of park and recreation facilities and analyzing the proportionate need of residents and employees for each type of facility. The SDCs to be paid by a development meet statutory requirements because they are based on the nature of the development and the extent of the impact of that development on the types of park and recreation facilities for which they are charged.

The parks and recreation SDCs are calculated based on the specific impact a development is expected to have on the City's population and employment. For facilities that are not generally used by employees (e.g., neighborhood parks), only a residential SDC may be charged. For facilities that benefit both residents and employees (e.g., community parks), an SDC may be charged for both residential and non-residential development.

Table 32 contains existing and projected population, housing units, and employment for the City. The data in this table establishes the units of demand and the units of payment for the reimbursement and improvement parks SDCs.

Table 32 - Existing and Projected Population, Housing Units, and Employment

		2017 Census Est.	2017 City Est.	2037 Projected	Analysis of Growth Units	Analysis of Growth CAGR*
1	Population	9,668	10,214	13,349	3,681	1.35%
	Single family residential	8,447	8,924	11,663	3,216	
	Multi-family residential	1,221	1,290	1,686	465	
2	Total Housing Units	3,706	3,915	5,117	1,411	
	Single family residential	3,007	3,177	4,152	1,145	
	Multi-family residential	699	739	965	266	
	Number of persons per Housing Unit	2.61				
	Single family residential	2.81				
	Multi-family residential	1.75				
3	Employment	3,990		5,509	1,519	1.63%
	Employment to population ratio	41.27%				

Data Sources and Notes:

1 Current population source: U.S. Census Bureau, 2013-2017 American Community Survey 5-year summary, Table DP05; 2037 projection per Population Research Center, Portland State University, June 30, 2017

2 Current Housing units source: U.S. Census Bureau, 2013-2017 American Community Survey 5-year summary, Table DP04, Table B25024, B25033; 2037 projection based on 2017 number of persons per occupied housing unit

3 Current employment source: U.S. Census Bureau, 2013-2017 American Community Survey 5-year summary, Table DP03; 2037 projection based on 2017 employment to population ratio

* CAGR - Compound Annual Growth Rate

Conversion of Employment Growth to Population Equivalents

The parks and trails facilities described in the 2008 Plan were designed with the needs of both residents and non-resident employees in mind. It is therefore appropriate to allocate the cost of these facilities to both residents and non-resident employees. The only exceptions are neighborhood parks. These facilities were designed for the needs of residents only and it is therefore appropriate to allocate the cost of these facilities to residents only.

While most parks and recreation facilities benefit residents and non-resident employees, these two groups do not utilize parks and recreation facilities with the same intensity. To apportion the demand for facilities between non-resident employees and residents in an equitable manner, a non-resident-employee-to-resident demand ratio must be calculated based on differential intensity of use.

The process that is used to develop this differential intensity of use is a two-step process. The first step is to estimate the potential demand for parks and recreation facilities by patrons. For this step, we rely on survey data from the Oregon Department of Parks and Recreation's 2013 "A Guide to Community Park and Recreation Planning for Oregon Communities". This guide identifies potential use by different population groups in a manner that averages day-of-week and seasonal effects. These averages are based on the maximum number of hours per day that each population group would consider the use of parks and recreation facilities to be a viable option.

The second step is to take the survey data and multiply the weighted average hours by an actual count for each population group based on data from the U. S. Census Bureau. We then apportion this potential demand among residents (four population groups) and non-residents (one population group). The data that was used to create the differential intensity of use is shown below in Table 33.

This approach is used to estimate the allocation of parks usage among residents and non-residents, which is summarized at the bottom of Table 33. The findings indicate that residents comprise 98 percent of the expected level of parks demand and non-residents that work within the city comprise 2 percent of the demand. These estimates are subsequently used in the next Section of this report to allocate the eligible SDC cost shares between these two user groups.

Table 33 - Calculation of Parks Usage by Resident and Non-Resident Workers

Parks Demand by Patron Classification	Resident: Non-Employed Adults	Resident: Children Ages 5 to 17	Resident: Adult Live In and Work In City	Resident: Adult Live In and Work Outside City	Non-Resident: Adult Live Outside and Work Inside City	Totals
Summer demand (June-September)						
Weekday hours:						
Before work	-	-	1.0	-	1.0	2.0
Meals/breaks	-	-	1.0	-	1.0	2.0
After work	-	-	2.0	-	2.0	4.0
Other leisure	12.0	12.0	2.0	2.0	-	28.0
Subtotal weekday hours	12.0	12.0	6.0	2.0	4.0	36.0
Number of summer, 2014 weekdays	87.0	87.0	87.0	87.0	87.0	87.0
Weekend hours:						
Leisure	12.0	12.0	12.0	12.0	-	48.0
Subtotal weekend hours	12.0	12.0	12.0	12.0	-	48.0
Number of summer, 2014 weekend days	35.0	35.0	35.0	35.0	35.0	35.0
Weighted average summer hours/day	*12.00*	*12.00*	*7.72*	*4.87*	*2.85*	*39.44*
Spring/Fall demand (April-May, October-November)						
Weekday hours:						
Before work	-	-	0.5	-	0.5	1.0
Meals/breaks	-	-	1.0	-	1.0	2.0
After work	-	-	1.0	-	1.0	2.0
Other leisure	10.0	4.0	2.0	2.0	-	18.0
Subtotal weekday hours	10.0	4.0	4.5	2.0	2.5	23.0
Number of spring/fall, 2014 weekdays	87.0	87.0	87.0	87.0	87.0	87.0
Weekend hours:						
Leisure	10.0	10.0	10.0	10.0	-	40.0
Subtotal weekend hours	10.0	10.0	10.0	10.0	-	40.0
Number of spring/fall, 2014 weekend days	35.0	35.0	35.0	35.0	35.0	35.0
Weighted average spring/fall hours/day	*10.00*	*5.72*	*6.08*	*4.30*	*1.78*	*27.88*
Winter demand (December-March)						
Weekday hours:						
Before work	-	-	0.5	-	0.5	1.0
Meals/breaks	-	-	1.0	-	1.0	2.0
After work	-	-	0.5	-	0.5	1.0
Other leisure	8.0	2.0	1.0	1.0	-	12.0
Subtotal weekday hours	8.0	2.0	3.0	1.0	2.0	16.0
Number of winter, 2014 weekdays	87.0	87.0	87.0	87.0	87.0	87.0
Weekend hours:						
Leisure	8.0	8.0	8.0	8.0	-	32.0
Subtotal weekend hours	8.0	8.0	8.0	8.0	-	32.0
Number of winter, 2014 weekend days	34.0	34.0	34.0	34.0	34.0	34.0
Weighted average winter hours/day	*8.00*	*3.69*	*4.40*	*2.97*	*1.44*	*20.50*
Forecast of demand by parks patron group:						
Annual weighted average hours/day	10.01	7.15	6.07	4.05	2.03	
Census data on parks patrons	290	2,631	1,310	2,636	334	
Potential daily demand hours/day	2,902	18,799	7,955	10,667	677	40,999
Percentage of demand by parks patron class	7.08%	45.85%	19.40%	26.02%	1.65%	100.00%
Resident/Non-resident percentages		98.35%			1.65%	100.00%
		Resident			Non-Resident	Total

Sources and Credits:

Hourly parks demand forecast - Donovan Enterprises, Inc.; A Guide to Community Park and Recreation Planning for Oregon Communities, April, 2013; Oregon Department of Parks and Recreation

Census data - U.S. Census Bureau, 2014 American Community Survey 5-year estimates, Tables DP03, DP05, and B08008,American FactFinder tool

Reimbursement Fee Calculations

As we discussed above, the City is park deficient on a whole. This has adversely impacted the calculation of the parks SDC reimbursement fee in that the current LOS implies 100% of the City's current parks and trails capacity is being absorbed by the City's current population. That mean only 0% of the system's-built capacity is available to serve growth. Therefore, we are not including a reimbursement fee for the parks SDC calculations.

Parks Master Plan CIP

On December 15, 2008, the City Council passed Resolution No. 08-43. That resolution codified the current parks SDC methodology, and also adopted the current twenty-year parks capital improvement plan. In the judgement of City Staff, that capital improvement plan is still valid. The CIP identifies future costs for new parks and trails, and the future costs for improvements to the City's existing parks inventory. The project team has reviewed this CIP with Staff, and eliminated any projects that have been built/funded, or eliminated from future consideration.

The corrected total CIP from Resolution No. 08-43 is shown below in Table 34.

Table 34 - 2019 Parks Master Plan CIP

Parks Master Plan Capital Improvements Costs [1]

	New Parks		Existing Parks			
	Land	Development	Within 5 Yrs.	6 to 10 Yrs.	11 to 20 Yrs.	Total
Pocket Parks						
Pioneer Village park development		$ 500,000	$ -			$ 500,000
						-
Subtotal Pocket Parks	-	500,000	-	-	-	500,000
Urban Plaza Parks						
						-
						-
Subtotal Urban Plaza Parks	-	-	-	-	-	-
Neighborhood Parks						
Mark Twain and Robert Frost sports fields				600,000		600,000
New Steelhammer neighborhood park	700,000	1,400,000				2,100,000
Mark Twain School/Park partnership	150,000	330,000				480,000
						-
Subtotal Neighborhood Parks	850,000	1,730,000	-	600,000	-	3,180,000
Community Parks						
Coolidge & McClaine park renovation			509,300			509,300
Town Square Downtown Gateway Enhancements			10,000			10,000
Silver Creek put-in/take-out are development			15,000			15,000
Silverton swimming pool feasibility study				50,000		50,000
New Community park acquision and development	1,000,000	2,500,000				3,500,000
New Senior Center (built with grant)						-
New Recreation Center		5,000,000				5,000,000
New skate park (built by City)						-
New dog park (built by City)						-
Community sports complex		500,000				500,000
Subtotal Community Parks	1,000,000	8,000,000	534,300	50,000	-	9,584,300
Nature Parks						
Pettit demonstration urban natural area			100,000			100,000
						-
Subtotal Nature Parks	-	-	100,000	-	-	100,000
Regional Parks						
Silverton Reservoir and Marine Park					500,000	500,000
Acquire additional 50 acres for water quality protection	500,000					500,000
Subtotal Regional Parks	500,000	-	-	-	500,000	1,000,000
Total Parks Improvements Costs	**$ 2,350,000**	**$ 10,230,000**	**$ 634,300**	**$ 650,000**	**$ 500,000**	**$ 14,364,300**
Trails & Connectivity Projects						
WW treatment plant opportunity area	$ 100,000					$ 100,000
Comprehensive trails plan		30,000				30,000
McClaine & Coolidge park to Oregon Garden pathway		131,567				131,567
Silver Creek greenway and multi-use feasibility study		50,000				50,000
Cowing street pedestrian bridge		194,490				194,490
Silver Creek greenway and multi-use acquisition	-					-
Silver Creek multi-use path development (phase 1)	225,000					225,000
Silver Creek multi-use path development (phase 2)		510,000				510,000
Silver Creek multi-use path development (phase 3)		200,000				200,000
Rail corridor multi-use trail feasibility study		50,000				50,000
Rail corridor multi-use path development		400,000				400,000
Abandoned rail corridor acquistion & on-street development		195,000				195,000
Total Trails Improvement Costs	**$ 325,000**	**$ 1,761,057**	**$ -**	**$ -**	**$ -**	**$ 2,086,057**
Parks Master Plan Total	**$ 2,675,000**	**$ 11,991,057**	**$ 634,300**	**$ 650,000**	**$ 500,000**	**$ 16,450,357**

[1] Source: City of Silverton Resolution No. 08-43; December 15, 2008

SDC Eligibility of Master Plan CIP

For purposes of this SDC methodology, each of the City's park facilities falls into one of the following seven categories:

- Pocket parks
- Urban plaza parks
- Neighborhood parks
- Community parks
- Nature parks
- Regional parks
- Tails

Table 35 compares the current inventory of facilities in each category with that category's adopted level of service. That comparison leads to a determination of surplus or deficiency for each category. Projects are eligible for improvement fee funding only to the extent that the projects will benefit future users. Therefore, only the categories with no deficiency (nature parks, and trails) are 100 percent eligible for improvement fee funding. The eligibility percentages of the remaining parks categories are reduced to reflect the level of deficiency.

Table 35 - Calculation of Master Plan CIP SDC Eligibility

Classification	LOS (units/1,000 population) [1, 2]	Inventory Units	Parks Inventory at Current [2]	Planned Additions [3]	Planned 2030	Level of Service Analysis Current need	Surplus / (Deficiency)	Parks SDC Eligibility Growth Need	Growth %
Pocket Parks	0.25	Acres	2.30	1.04	3.34	2.55	(0.25)	0.78	75.55%
Urban Plaza Parks	0.10	Acres	-	1.33	1.33	1.02	(1.02)	0.31	23.48%
Neighborhood Parks	1.00	Acres	-	13.35	13.35	10.21	(10.21)	3.13	23.48%
Community Parks	2.00	Acres	16.00	10.70	26.70	20.43	(4.43)	6.27	58.60%
Nature Parks	2.00	Acres	29.67	-	26.70	20.43	9.24	-	100.00%
Regional Parks	5.00	Acres	46.67	20.08	66.75	51.07	(4.40)	15.67	78.06%
	10.35		94.63	46.50	138.16				
Trails	0.20	Miles	2.00	0.61	2.61	2.00	-	0.61	100.00%

[1] PSU service area population estimate 2017 — 10,214
Level of Service expressed in units per 1,000 residents — 10.21
Estimated 3037 service population per PSU — 13,349
Level of Service expressed in units per 1,000 residents — 13.35

[2] 2008 Parks Master Plan; Table 3 Parks, Greenspaces, and Recreation Facilities

[3] Planned additions to attain 2013-17 SCORP level of service

Improvement Fee Calculations

The improvement fee is the cost of capacity-increasing capital projects per unit of growth that those projects will serve. The unit of growth, whether number of new residents or number of new employees, is the basis of the fee. In reality, the capacity added by many projects serves a dual purpose of both meeting existing demand and serving future growth. To compute a compliant SDC rate, growth-related costs must be isolated and costs related to current demand must be excluded. We have used the "capacity approach" to allocate costs to the improvement fee basis. Under this approach, the cost of a given project is allocated to growth in proportion to the growth-related capacity that projects of a similar type will create. The capacity analysis of the Plan CIP is shown numerically in Table 35. Table 36 lays out the capacity approach to deriving the parks improvement fee.

Table 36 - Calculation of the Parks Improvement Fee

			<---------- Funding Sources for Parks Master Plan CIP ---------->			
Classification	Total MP CIP	SDC Eligible %	Existing Users	Total SDC	Residential	Non-Residential
Pocket Parks	$ 500,000	76%	$ 122,235	$ 377,765	$ 371,530	$ 6,235
Urban Plaza Parks	-	23%	-	-	-	-
Neighborhood Parks	3,180,000	23%	2,433,241	746,759	746,759	zero
Community Parks	9,584,300	59%	3,967,549	5,616,751	5,524,046	92,705
Nature Parks	100,000	100%	-	100,000	98,349	1,651
Regional Parks	1,000,000	78%	219,385	780,615	767,731	12,884
Trails	2,086,057	100%	-	2,086,057	2,051,627	34,430
Total	$ 16,450,357		$ 6,742,410	$ 9,707,947	$ 9,560,043	$ 147,905

	Total SDC	Residential	Non-Residential
Future parks master plan capacity-expanding costs	$ 9,707,947	$ 9,560,043	$ 147,905
Adjustments to improvement fee basis:			
Parks improvement fee SDC fund balance	1,800,479	1,773,048	27,431
Adjusted future parks master plan capacity-expanding costs	$ 7,907,468	$ 7,786,995	$ 120,474
Future Demand Units:			
Growth in population (People)		3,681	
Growth in occupied housing units:			
Single family residential		1,145	
Multi-family residential		266	
Growth in employment (Employees)			1,519
Unit improvement fee Parks SDCs:			
Per person		$ 2,115	
Per occupied housing unit:			
Single family residential		$ 5,942	
Multi-family residential (per unit)		$ 3,695	
Per employee			$ 79

Parks SDC Model Summary

The 2019 parks SDC methodology update was done in accordance with Silverton Municipal Code Chapter 13.70, and with the benefit of adopted 2008 Parks SDC methodology and CIP. We recommend the City update the SDC charge and methodology to reflect the current capital improvement program. Our analysis indicates the City can charge a maximum of $6,231 per detached single-family residence. The complete proposed schedule of parks SDCs is shown below in Table 37. Table 38 give a comparison of the proposed and current parks SDC for a new single family detached residence.

Table 37 - Proposed Transportation SDCs by ITE Code

Customer Classification	Number of Dwelling Units	Proposed Schedule of Parks SDCs			
		Reimbursement	Improvement	Administration	Total
Detached single family	1	$ -	$ 5,942	$ 297	$ 6,240
Mobil/manufactured home	1	-	5,942	297	6,240
Multifamily - $/dwelling unit	1	-	3,695	185	3,880
Duplex	2	-	7,390	370	7,760
Tri-plex	3	-	11,085	554	11,640
Four-plex	4	-	14,781	739	15,520
Apartment complex	*	*	*		*
Condominium complex	*	*	*		*
Retirement/Assisted Living cc	*	*	*		*
Business - $/FTE Employee		$ -	$ 79	$ 4	$ 83

* - multiply the number of dwelling units by the corresponding detached multi-family per dwelling unit fee component

Table 38 - Proposed and Current Parks SDCs for a Detached Single-Family Residence

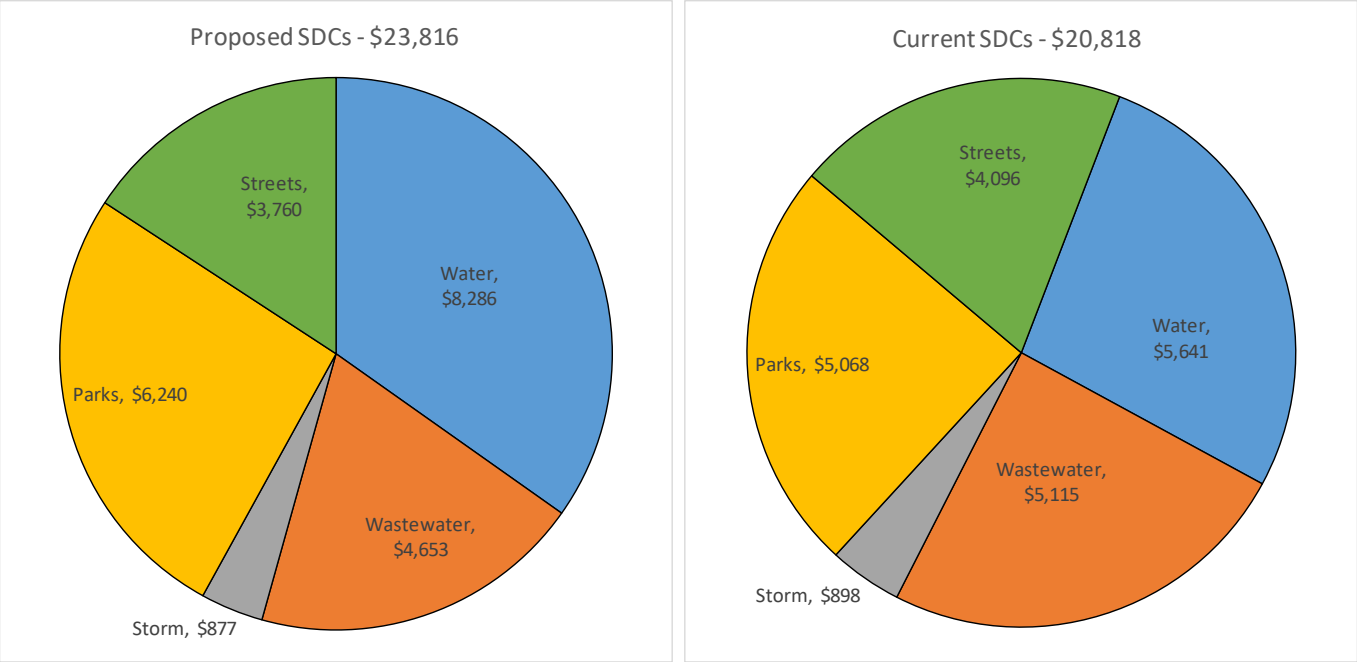
Parks SDC Components	Proposed	Current	Difference
Reimbursement fee	$ -	$ -	$ -
Improvement fee	5,942	5,068	874
Administration fee @ 5%	297	-	297
Total wastewater SDC	$ 6,240	$ 5,068	$ 1,172

Conclusions and Recommendations

The 2019 SDC methodology update was done in accordance with SMC Chapter 13.70, and with the benefit of adopted plans and plan updates for municipal services. Our analysis indicates the City can charge a maximum of $8,286 for water, $4,653 for wastewater, $877 for stormwater, $3,760 for transportation, and $6,240 for parks. These figures are on a per equivalent single family residential unit basis. The sum of these maximum fees amounts to $23,816 per unit; $2,998 more than the sum of the current SDCs of $20,818.

A graphic side by side comparison of the proposed and current schedule of SDCs is shown blow in figure 2.

Figure 2 - Proposed and Current Schedule of SDCs



Finally, we recommend the City adopt a policy of reviewing its suite of SDCs every five years. Between the review dates, the city should apply a cost adjustment index to the SDC rates annually to reflect changes in costs for land and construction. This policy should be codified in the Silverton Municipal Code (SMC §13.70). We suggest the City consider the following language for that section of the SMC:

1. Notwithstanding any other provision, the dollar amounts of the SDC set forth in the SDC methodology report shall on January 1st of each year be adjusted to account for changes in the costs of acquiring and constructing facilities. The adjustment factor shall be based on:
    a. The change in construction costs according to the Engineering News Record (ENR) Northwest (Seattle, Washington) Construction Cost Index (CCI).
    b. The system development charges adjustment factor shall be used to adjust the system development charges, unless they are otherwise adjusted by the city based on a change in the costs of materials, labor, or real property; or adoption of an updated methodology.